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**A QUALITATIVE AND
QUANTITATIVE ANALYSIS OF
THE SOUTH AFRICAN TAX
SYSTEM
1995-2005**

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THESIS PRESENTED FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY (TAXATION) IN THE
DEPARTMENT OF ACCOUNTING
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August 2007

ABSTRACT

I evaluate the efficiency and effectiveness of the South African tax system in terms of revenue collection, exploitation of statutory tax bases and the achievement of fiscal policy goals. The evaluation is undertaken via the development of qualitative and quantitative testing frameworks, based on the collation of international experience and the adaptation of existing methodologies to the domestic context.

The qualitative framework examines existing and historical fiscal policy goals, in light of the internationally recognised goals of tax systems and the prevailing economic situation in South Africa. I conclude that the aforementioned policy goals are in line with international standards, but are unlikely to be achieved given the existing components of South African tax legislation. Particular emphasis is placed on the potentially negative effects of the South African capital gains tax. I also test the South African tax system for evidence of internationally recognised best practice characteristics in respect of effectiveness and efficiency, utilising an established set of benchmarks, and conclude that the aforementioned characteristics are present to a satisfactory degree.

The quantitative framework calculates the effective tax burden on specific types of income, using average effective tax rates. I also calculate synthetic tax bases and calculate projected tax revenues via the application of historical statutory tax rates for comparison to actual tax collections. I conclude that the tax system is an effective means of revenue collection and effectively exploits the existing tax bases, although a deficiency is noted with respect to the personal income tax base.

Finally, I examine possible alternatives to the existing tax system, and suggest the introduction of certain provisions that are designed to alleviate the deficiencies noted above.

ACKNOWLEDGEMENTS

I would like to gratefully acknowledge the following people:

- My supervisors Associate Professor Jennifer Roeleveld and Professor Akpan Ekpo for their input, supervision and assistance
 - My fiancée, parents and brother for their support

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GLOSSARY OF TERMS

The following is a glossary of terms and acronyms utilised in this report:

AETR	Average effective tax rate
AICPA	American Institute of Certified Public Accountants
CBO	United States Congressional Budget Office
CF	Corporate fund (of a South African life insurer)
CFC	Controlled foreign company
CGT	Capital gains tax
CIS	Collective investment scheme
CISCA	Collective Investment Scheme Control Act (No. 45 of 2002)
CISP	Collective investment scheme in property
CISS	Collective investment scheme in securities
CPF	Company policyholder fund (of a South African life insurer)
ECFIN	Directorate-General for Economic & Financial Affairs of the European Commission
EDA	Estate Duty Act (Act 45 of 1955)
EU	European Union
FDI	Foreign direct investment
GAAP	Generally accepted accounting practice
GDP	Gross domestic product
GOS	Gross operating surplus
GST	General sales tax
HDI	Human development index
IMD	International Institute for Management Development
IMF	International Monetary Fund
IPF	Individual policyholder fund (of a South African life insurer)
ITA/Act	Income Tax Act No. 58 of 1962 (South Africa)
METR	Marginal Effective Tax Rate
NOS	Net operating surplus
NPISH	Non-profit institution serving households
OECD	Organisation for Economic Co-operation & Development
PAYE	Pay-as-you-earn
PE	Permanent establishment
R&D	Research & development
Republic	Republic of South Africa
SARB	South African Reserve Bank
SARS	South African Revenue Service
SSC	Social security contributions
STC	Secondary tax on companies
Tax ratio	Ratio of tax revenue to GDP
TORFA	Tax on Retirement Funds Act, 1998 (South Africa)
UNU	United Nations University
UPF	Untaxed policyholder fund (of a South African life insurer)

UPT	Undistributed profits tax
USAID	United States Agency for International Development
VAT	Value-added tax
VAT Act	Value-added Tax Act No. 89 of 1991 (South Africa)
WIDER	World Institute for Development Economic Research
WIID	World Income Inequality Database

1 Introduction

1.1 Objectives of the study

This study seeks to critically assess the efficiency and effectiveness of the South African tax system, using both qualitative and quantitative methods. The assessment is facilitated via the development of a set of frameworks, based on international observations of best practice in taxation policy, as well as existing empirical research.

The specific objectives of the study are as follows:

- the measurement of the structure and design of the South African tax system against international benchmarks designed to test for the presence of certain “best practice” characteristics (i.e. those characteristics which maximise the effectiveness and efficiency of tax systems in the achievement of fiscal policy goals);
- an analysis of the economic position of South Africa with respect to the areas pertaining to core domestic fiscal policy goals, and a critical analysis of how existing tax system components affect those areas;
- the amendment of internationally-developed measures of tax burdens to encompass the specific nuances of the South African tax system, and to utilise those measures to
 - compare statutory and actual tax burdens, and

- to synthesise domestic tax bases for the purpose of comparing actual and potential tax revenues, thereby testing for optimal revenue collection, and
- to utilise the results of the analysis and testing discussed above to suggest improvements to the existing tax system.

1.2 Purpose and rationale

It is widely accepted that the goals and effects of a country's system of taxation extend further than the collection of revenue. Taxation is utilised for the achievement of a variety of economic goals, including income redistribution, behavioural influence over economic participants, and the facilitation of economic growth via the attraction of foreign direct investment (FDI). Furthermore, taxation has direct and significant effects on labour, savings and investment. The design and function of a taxation system is therefore a crucial component of a government's fiscal and economic policy.

Research has shown that numerous international bodies have, over time, sought to evaluate the tax systems of different countries. The motivations for these evaluations have varied from assessment for foreign aid, pure economic analysis and suitability for investment purposes.

Although various fiscal studies have been performed in the South African context, a comprehensive analysis of the efficiency and effectiveness of the overall South African

tax system has not been performed. There is therefore a gap in the general body of South African tax knowledge for such an analysis.

The study is further motivated by an increasing perception among South African tax experts and business professionals that the domestic tax system is too complex, and poorly adapted to the South African economy and commercial environment. Each tax year brings new legislative amendments to close loopholes and address deficiencies in the legislation, increasing the existing problem and raising new issues which require management. The existence of the scope for a critical analysis of the tax system is undeniable.

The concept underlying this study is based on the relationship between the fiscal policy goals of the South African government, and the methods used to achieve those goals.

1.3 Research questions

The research problem at hand is whether or not South Africa's income tax framework complies with the expected and accepted international standards, and furthermore, whether or not the existing tax legislation and systemic components represent the most efficient and effective method of taxing the wealth, income and consumption of South African taxpayers (i.e. is revenue collected for the achievement of the South African government's economic and fiscal goals in the best possible manner).

The research questions, which have been concluded upon, are as follows:

1. How do the major elements of the South African tax system, as defined in the scope of this study, measure against internationally identified quantitative and qualitative benchmarks consistent with an effective and efficient revenue system?
2. How effectively do the aforementioned elements collect revenue from the South African tax base and achieve the stated fiscal policy goals of the South African Government?
3. With reference to the first two questions, and having regard to the economic, political and social aspects of South Africa relative to other countries, what alternative elements would improve the effectiveness and efficiency of the tax system?

1.4 Scope of the study

The scope of this study extends to the following instruments of the South African tax system:

- The income tax on individuals and corporations (excluding donations tax and estate duties)
- The capital gains tax (CGT)
- The secondary tax on companies (STC)
- The value-added tax (VAT)

The elements described above comprise the major sources of tax revenue for the South African Government, as evidenced by the revenue results reported by the South African National Treasury. A detailed analysis of other taxes and levies such as property transfer duties, customs and excise duties, regional rates and levies, stamp duties and fuel taxes is excluded from the scope of this study. These taxes are, however, utilised for the purposes of the quantitative analysis.

Certain entities (such as pension funds and the untaxed policyholder fund of long-term insurers) are subject to retirement funds tax (RFT), rather than income tax. The taxation of these entities is considered to be outside the scope of this study.

The scope of this study does not include a detailed analysis of the general anti-avoidance rules (GAAR) contained in the existing tax legislation.

1.5 Methodological approach

The methodological approach for the study comprises three parts, as follows:

1.5.1 Qualitative analysis

This aspect of the study collates the international research on the elements of an effective national tax system, and uses those characteristics to establish reasonable qualitative benchmarks against which tax systems can be measured.

Studies and practice notes in this regard have been published by, *inter alia*, the OECD (including an extensive study of fiscal policy in European Union member states) and the American Institute of Certified Public Accountants, as well as independent published research and commentary.

It is recognised that the revenue authorities of any given country operates in a unique political, socio-economic and technological environment relative to other countries. This has been considered in the comparative exercise of this aspect. Certain aspects of the international research required consideration with respect to the suitability thereof in evaluating the domestic case.

This aspect of the study measures the effectiveness of the South African tax system at the legislative level; more specifically, the ability of the existing tax legislation to meet the fiscal policy needs of national government given the economy and tax base of South Africa. The goal of a country's tax system is the provision of government revenue in

order to fulfill economic goals; however, the fiscal system and legislation instituted by a country must be specifically tailored to the unique situation and characteristics of that country.

International research has identified certain goals around which effective tax systems should be designed. These goals are achieved in an effective and efficient manner by including the abovementioned “best practice” characteristics in the inherent design of the tax system. I examine the internationally recognised goals of taxation systems, and compare them to the existing and historical fiscal policy goals of the South African Government. I then analyse the existing economic situation in South Africa in each of the core fiscal policy areas, and comment on how effectively and efficiently the current tax legislation would achieve the fiscal goals in the context of the aforementioned situation.

Following from the economic analysis and commentary, I test for the presence of the abovementioned best practice characteristics in the existing domestic tax system. In 2004, Mark Gallagher published a paper outlining certain quantitative benchmarks and indicators which can be utilised globally to measure the performance and capabilities of international tax systems. The paper, funded by the United States Agency for International Development, was commissioned in order to further the efforts of bodies such as the World Bank and the International Monetary Fund to perform the aforementioned measurements using a standard and transferable set of tools.

The abovementioned paper built on and referenced the previous efforts of studies performed on the tax systems of, inter alia, countries in Eastern Europe, the former USSR and South America. Whilst these studies were acknowledged and lauded, Gallagher considered his paper a more complete set of standards, citing certain deficiencies in the previous studies which resulted in incomplete toolsets being utilised therein.

This aspect of the study utilises the benchmarks and indicators reported by Gallagher to measure, on a quantitative level, the effectiveness of the South African tax system. This aspect required the collection of primary data for the purpose of calculating the relevant benchmarks, and the comparison thereof to international results. The result of the analysis (i.e. the identification of the presence or absence of the international standards for tax system design) is a strong measure of how effectively and efficiently the tax system would achieve the abovementioned fiscal goals, based on its design.

The selection of countries to which South Africa's results are compared is considered with respect to the characteristics of those countries relative to South Africa's; in other words, countries with similar economic, financial, social and technological situations to South Africa are best suited for benchmark comparisons. Where differences are identified, the impact of these on the comparison have been considered and explained.

The South African tax system has been measured against the benchmarks established above, and a conclusion drawn on its effectiveness in terms of international standards.

1.5.2 Quantitative analysis

The study draws on the internationally recognised methods of measuring fiscal capacity and evaluating the effectiveness of tax systems, more specifically the average effective tax rate (AETR) method. The AETR methodology utilises the tax bases of and revenue collected in a given jurisdiction to calculate average effective rates for that jurisdiction. These rates are useful for comparison to other jurisdictions, as well as measuring the effective tax rates against the statutory rates prescribed in the jurisdiction under review. This provides an excellent measure of the effectiveness of the overall tax system in terms of the enforcement of statutory tax burdens.

Furthermore, this aspect of the study involves the synthesis of the tax bases (per class of taxpayer) forming the basis of the revenue collection capabilities of the South African tax system. By applying the statutory tax rates to the tax bases calculated above and comparing the results to the actual collections reported by the Treasury, it is possible to conclude on the effectiveness of revenue collection in South Africa.

1.5.3 Consideration of alternative legislative components

Based on the results of the abovementioned analyses, research has been performed into the internationally recognised "best practice" legislation used to tax the income identified. This involved a certain degree of original theoretical work, as unique alternatives require consideration for the South African case. This section also includes an evaluation of alternative tax systems (e.g. withholding taxes on household investment income and consumption-based tax systems).

The result of this aspect of the study is a conclusive evaluation of the existing legislation and taxes utilised in South Africa, as well as recommendations for improvements where necessary. The evaluation indicates how South Africa can best tax the income earned by its taxpayers, and the level at which this is already being done.

1.6 Contributions of the study

The research performed and findings of this report provide the following contributions to the general body of taxation knowledge:

- A critical analysis of selected elements of the South African tax system against international benchmarks for best practices, specifically in those areas related to domestic fiscal policy goals;
- The tailoring of existing AETR methodology to a South Africa-specific context, allowing for the measurement of actual domestic tax burdens and the formulation of synthetic tax bases for the major contributive components of tax revenues, and
- Recommendations for tax measures that would improve the effectiveness and efficiency of the South African tax system, based on the results of the qualitative and quantitative testing performed.

2 Literature review

As noted above, there is a gap in the existing body of knowledge with respect to the overall efficiency and effectiveness of the South African tax system. I discuss below the significant existing research, and critically discusses the effectiveness thereof in terms of the research questions listed above.

Go *et al* (2005) analyse South Africa's VAT, concluding on the regressive nature thereof and its effectiveness as a source of government revenue relative to other tax instruments. The analysis is limited to the effectiveness of VAT relative to other taxes, and does not include a discussion of the effectiveness of other components of the tax system or the effectiveness thereof in the achievement of South African fiscal policy goals.

Matlanyane and Harmse (undated) examine the implications of trade liberalisation on international trade tax revenue and the macroeconomic implications thereof in the context of the South African economy. The authors focus on quantitative restrictions using customs duty as a proxy for trade tariffs. No other components of the overall South African tax system are explored.

Strydom (2000) analyses the effectiveness of South African fiscal policy for the period 1970 to 2000, focusing on employment and economic growth. His analysis is limited to the supply side of fiscal policy; in other words, the extent to which Government had invested in the areas necessary to achieve its macroeconomic goals in the aforementioned

areas. The analysis does not include the effect of the design or components of the tax system in the achievement of fiscal policy goals.

Koch *et al* (2005) examine the distorting effect of taxation on economic behaviour in South Africa, using tax and economic data and a two-stage modeling technique. The authors examine the relationship between total taxation, taxation mix and economic growth, and conclude that decreased tax burdens are “...*strongly associated with increased economic growth potential*”. Furthermore, the authors find that the potential for economic growth increases with decreased indirect taxation relative to direct taxation. The testing involved is solely based on econometric analysis, with no reference to other fiscal policy goals or tax system components, and does not conclude on the effectiveness of the latter in the achievement of the former.

Masters (2006) presents the international experience of the advantages and disadvantages of various tax incentives, and comments on the potential effectiveness of such incentives in the South African context. The presentation does not include a discussion of the impact of such incentives on existing fiscal policy goals, nor does it address the means by which these incentives would be introduced into the existing tax system.

Morekwa and Schoeman (2005) investigate the progressivity of the South African tax system using a number of empirical testing methods. The analysis focuses solely on the presence and degree of progressiveness, and does not address the effect of progressiveness on the broader economy.

3 Qualitative Analysis

3.1 The goals of tax systems

It is widely accepted that a country's tax system should be designed to achieve three goals: the raising of revenue, the redistribution of wealth and resources across population segments, and the regulation and guidance of economic participants (Avi-Yonah, 2005).

The first goal is self-explanatory; without an adequate revenue stream, a government is unable to provide public goods, build infrastructure or fund sustainable development. However, although the latter goals are more contentious, they have a real place in fiscal policy.

Redistribution tools are essential in free markets, where incomes may not be equitably spread over all demographics. Furthermore, fiscal policy tools represent a powerful method whereby governments may influence the behaviour of market participants – Avi-Yonah mentions the deductions available in the United States in respect of mortgage interest payments and charitable donations, which were clearly introduced in order to encourage private home purchases and donations respectively.

With the abovementioned goals in mind, classical economic theory has also established certain characteristics which should be exhibited by a tax, or taxes, which may be considered the “golden rules” of fiscal policy. The presence of these characteristics serves to aid in the achievement of the abovementioned goals, and is the first step in establishing best practice in the area of public finance.

The starting point of the aforementioned characteristics is the four “maxims” established by economist Adam Smith: equity, certainty, convenience and cheapness of collection. Developing economic theory has expanded these maxims to include other key characteristics of effective and efficient tax policy, namely simplicity, neutrality, the encouragement of economic growth and efficiency, transparency, the minimisation of underpayments and non-compliance (also known as the “tax gap”) and the provision of appropriate government revenues. With respect to the last characteristic, I have noted that the considered of GAAR is outside the scope of this study – I consider the effect of taxing provisions, rather than punitive anti-avoidance provisions, in this regard.

Nellen (2003) notes that the abovementioned characteristics, as set out in a Policy Concept Statement issued by the Tax Division of the American Institute of Certified Public Accountants (AICPA), were affirmed and applied in a number of different US-based tax system analyses, including studies by the Joint Committee on Taxation (1995), the Legislative Analyst’s Office (2003), the Washington State Tax Structure Study Committee (2002), and the Hawaii Tax Review Commission (2003).

Owens (2005) notes that tax reform will require constant trade-offs between the factors measured above. Furthermore, in order to make judgments regarding such trade-offs, Owens recommends a combination of domestic economic analysis and an analysis of international experience.

I set out below a detailed discussion of each of the identified characteristics.

3.1.1 Equity and fairness

The principal of equity is based on the premise that taxpayers should be taxed according to their ability to pay. Equitable taxes should be both horizontally equitable (taxpayers with the same means pay the same amount of tax) and vertically equitable (taxpayers in higher income brackets pay more than those in lower income brackets).

The structure of an equitable system of tax rates is extremely contentious. For example, most tax systems are designed as equitable via progressive tax rates – that is, rates increase as taxpayers move into higher income brackets (as in the South African case). Whilst such a rate system appears vertically equitable (as higher income taxpayers pay more than lower income taxpayers), it may not be fair. At a flat rate of personal tax (i.e. a fixed percentage, or proportionate system), higher income taxpayers would automatically pay more tax (25 per cent of R1000 would always be higher than 25 per cent of R100). Progressive tax rates may therefore be seen as biased against high-income taxpayers, and may also serve to increase the complexity of the tax system (see below).

Equity can also be achieved without a complex and distorted rates system. Exemptions granted to certain groups of taxpayers, whether directly (via a targeted demographic or industry) or indirectly (via the targeting of certain types of income known to be concentrated in low income groups, such as pensioners) would also lessen the burden for the recipients of such exemptions, without increasing the tax burden of those taxpayers to whom the exemptions are not available. Tax exemptions are not without their own risks,

however, as they increase the propensity for tax avoidance planning and may result in overall revenue loss to a country's fiscus.

AICPA (2001) notes that the dual principles of equity and fairness are as much related to the perception of those characteristics as to the reality of the tax system. Furthermore, when evaluating the equity of a country's tax system, regard must be had to the overall system, rather than concentrating on one particular tax.

3.1.2 Certainty

Tax rules and legislation should be specific as to the determination of a taxpayer's liability for tax, as well as how and when the tax should be paid. When implemented correctly, this principal ensures timely and correct compliance with tax legislation and limits opportunities for taxpayers to manipulate tax laws to decrease or defer liabilities.

A tax system can be characterised as certain where a taxpayer is able to accurately predict the timing and amount of their tax liability based on the nature of the transaction that they have undertaken (ibid). Tax legislation should therefore clearly categorise types of transactions, and should specify objective valuations for those transactions. Payment dates and methods should be clearly specified.

3.1.3 Convenience

AICPA (ibid) notes that a tax should be due at a time or in a manner that is most likely to be convenient for the taxpayer. The example given is that of an indirect sales tax such as VAT or general sales tax (GST), which is payable at the time that the good is purchased,

or withholding taxes on investment or employment income (viz. the South African pay-as-you-earn, or PAYE, employment tax system). The principle of convenience greatly increases the likelihood that taxes will be paid.

3.1.4 Economy of payment and collection

An effective system of taxation should minimise the costs incurred by the parties involved. Taxpayers should incur low costs in order to comply with the tax, and government should incur low costs in collecting payments from those taxpayers. High collection and compliance costs reduce the overall effectiveness and efficiency of a tax system by increasing the complexity of the system for taxpayers (see below), and reducing the overall revenue collected by government.

3.1.5 Simplicity

One of the most critical principles identified by AICPA is that a tax law should be drafted and enacted as simplistically as possible, both for the taxpayers and the administering body. At a 1996 National Hearing concerning the restructure of the United States Internal Revenue Service, Michael Mares, Chair of the Tax Executive Committee of the AICPA, noted that the factors leading to the complexity of the US tax system needed to be investigated, and opportunities for simplification identified. Mares stated that the lack of simplicity in a tax system negated many of the other principles described in this section, including the principles of convenience, certainty, and economy of collection.

Furthermore, Mares (1996) discusses the link between the complexity of a country's tax system and the ability of taxpayers to comply with that system. He notes that the ability and willingness of taxpayers to comply with tax laws is strongly dependent on their ability to understand the prevailing tax legislation, or to obtain advice from tax advisors who are able to do so. The effort and cost involved in compliance increases with the complexity of the tax system, decreasing the probability of full compliance. Mares also notes that complexity interferes with business decisions, as the tax effects of transactions are difficult to predict.

3.1.6 Neutrality

A well quoted maxim in commerce states that "*the revenue tail should not wag the commercial dog*". In other words, the tax effect of a transaction or series of transactions should not unduly influence a taxpayer's intention to enter into those transactions. Furthermore, the concept of neutrality is equally applicable to the tax treatment of various types of transactions, for example the treatment of gains on the disposition of assets being classified as revenue (income) or capital in nature. Where items are treated differently for tax purposes, taxpayers will be incentivised to divert income streams into the category that is more favourable for tax purposes.

The overall neutrality of a tax system is often adversely affected by a government's fiscal regulation strategies. In some cases, government may *attempt* to alter taxpayer behaviour by enhancing the positive or negative tax treatment of certain transactions (refer above). Whilst this is an acceptable approach, the balance between regulation and neutrality should be a priority.

3.1.7 Economic growth and efficiency

Fiscal policy plays an important role in the achievement of a country's economic goals, including economic growth, capital formation and international competitiveness. These goals can be achieved via the encouragement of domestic and foreign direct investment through tax incentives, internationally competitive effective tax rates and targeted customs and excise schemes.

It is imperative that a country's fiscal policy and tax legislation be aligned with its overall economic strategies. Furthermore, the effect of tax policy on individual economic strategies also requires consideration; tax incentives which encourage foreign investment should not lead to bias against domestic firms, and tax provisions which encourage investment in capital assets should not lead to a decrease in labour utilisation.

Nellon (2003) quotes an excerpt from the US Joint Committee on Taxation, stating that tax system analyses should focus on the level to which such systems encourage or hamper economic efficiency. Emphasis is placed on tax measures that affect taxpayer behaviour, domestic production, international competitiveness of exports and overall economic growth.

3.1.8 Transparency

The principle of transparency is linked to the goals of certainty, simplicity and neutrality. A transparent tax system allows taxpayers to know the amount and timing of their true tax liabilities. The concept of transparency also extends to government reporting in

respect of public expenditure – taxpayers should know where tax revenues are being spent in order to encourage compliance and respect for the system.

3.1.9 Diminution or elimination of the tax gap

A tax system should contain specific measures to minimise non-compliance and underpayments. Underpayments may occur unintentionally (due to complex legislation and a lack of understanding by taxpayers) or intentionally (via tax evasion, the understatement of income or omission of information). The aforementioned measures may be included in the taxing legislation (such as punitive sections for underpayments and anti-avoidance provisions), or ancillary thereto (such as government-provided taxpayer education and assistance facilities).

3.1.10 Provision of government revenues

As noted above, a primary *raison d'être* for taxation is the provision of government revenue. A tax system should therefore be designed in such a manner so as to enable the government to predict the timing and amount of tax revenues, in order to facilitate an effective process of budgeting and government expenditure.

In order to achieve the above, a government should ensure that the tax system includes a diversified and stable tax base. AICPA (2001) also notes that a mix of taxes is a key factor in stabilisation, in order to minimise the effect of economic changes on the tax base. Examples of such changes include employment levels (which affect levels of tax collected from employment income) and levels of exports and imports (which would

affect the quantum of duties collected). Sales taxes would also fluctuate with changes in economic output and consumer spending.

Fox (2002) states that revenue collection planning should extend past the subsequent fiscal year's requirements. The planning should include measures to fund government over the long term, without frequent tax rate changes or manipulation of tax bases.

3.2 South African fiscal policy goals

The general theory of fiscal goals finds application in the South African context. Marcus (2006) reviewed the historical fiscal policy goals of the South African government, noting that the core fiscal policy goals have remained largely unchanged over the past decade.

Marcus reports that in 1996 the goals of the Reconstruction and Development Programme included the elimination of poverty and deprivation by achieving macroeconomic stability, sustained economic growth and increased competition (Trevor A Manuel, Minister of Finance – Paper delivered to the Bureau for Economic Research Conference, 8 October 1996). Economic growth was also intended to increase employment levels, with the latter referred to as the central focus of the country's macroeconomic strategy. Around that central focus, the major goals of South Africa's macroeconomic strategies were redistribution of income and opportunities, the provision of social services and increased productive employment (ibid).

In 1997, the broad policy objectives for the South African economy were the promotion of a faster rate of domestic income growth, increased employment and balanced,

equitable claims on the available economic resources (Trevor A Manuel, Minister of Finance - Presentation to the Standard Bank South African Financial Markets Conference, 7 November 1997). Marcus (ibid) notes that Manuel identified the volatility of capital flows, but commented that economic expansion would be facilitated through the mobility of capital and the efficiency of capital markets. He concluded that the existing policy framework, which recognised these factors, would attract foreign investment and lead to economic growth.

Marcus observes that the core South African fiscal and economic policy goals remain economic growth, poverty reduction and job creation in 2006.

In addition to the above, the 2005 Budget Speech referred to fiscal foundations which would give rise to increased investment and productive capacities, the creation of jobs and the overall growth of the revenue base. The existing fiscal policy base, which remains unchanged from that speech to the time of Marcus's 2006 study, was described as one which was designed to underpin growth and investment. The elimination of barriers to business development and job creation were also identified as an area to be addressed, along with the attraction of foreign investment and external capital, the deepening of financial markets and increased trade relations.

The policy goals noted above have a clear correlation with the taxation goals outlined in section 3.1. Given the link between the taxation goals and the "best practice" characteristics set out in the preceding section, it follows that the presence of those characteristics in the South African tax system would aid in the achievement of the

country's fiscal goals. The extent to which such fiscal goals are being achieved is discussed below.

3.3 *The Economics of Taxation in South Africa*

This section sets out the current economic situation in South Africa, with specific reference to the abovementioned fiscal policy goals identified by the South African Government. International commentary on the role of taxation in each of these areas has also been included.

Appendix A to this report (from ABSA, 2003) lists the key macroeconomic variables for South Africa in respect of the period under review, and includes projections to 2017 based on macroeconomic modeling. This information is intended to provide a general overview of the South African economy in order to provide a context for the specific areas mentioned below.

3.3.1 Wealth, social development and income distribution

The United Nations measures wealth and social development via the Human Development Index (HDI). The HDI, expressed as a ratio between 0 and 1, is composed of three factors: longevity (measured by life expectancy at birth); knowledge (measured by weighting the adult literacy and education enrolment rates); and standard of living (measured via per capita gross domestic product, or GDP, expressed in US dollars. Du Toit (2002) reports declining domestic HDI levels from 1995 to 2000, but notes that this is largely attributable to decreased life expectancies arising from the spread of HIV.

Tables 1 and 2 depict selected HDI and per capital GDP measures, the former on a comparative basis with other developing countries.

Table 1: HDI for selected developing countries, 1975 – 2000

	1975	1980	1985	1990	1995	2000	World ranking 2000	Level of human development 2000
Australia	0.844	0.861	0.873	0.888	0.927	0.939	1	High
USA	0.843	0.864	0.893	0.912	0.925	0.939	6	High
UK	0.841	0.848	0.858	0.878	0.916	0.928	13	High
Spain	0.819	0.838	0.855	0.876	0.895	0.913	21	High
Korea, Republic	0.681	0.732	0.774	0.815	0.852	0.882	27	High
Hungary	0.777	0.793	0.805	0.804	0.808	0.835	35	High
Chile	0.702	0.737	0.754	0.782	0.811	0.831	38	High
Mexico	0.689	0.734	0.752	0.781	0.774	0.796	54	Medium
Malaysia	0.616	0.659	0.695	0.722	0.760	0.782	59	Medium
Brazil	0.644	0.679	0.692	0.713	0.737	0.757	73	Medium
China	0.523	0.554	0.591	0.623	0.661	0.704	96	Medium
South Africa	0.649	0.663	0.683	0.714	0.724	0.695	107	Medium
Indonesia	0.466	0.530	0.582	0.623	0.664	0.684	110	Medium
India	0.407	0.434	0.473	0.511	0.545	0.577	124	Medium
Kazakhstan	0.443	0.489	0.512	0.533	0.523	0.513	134	Medium
Madagascar	0.369	0.413	0.427	0.434	0.441	0.469	147	Low
Nigeria	0.328	0.388	0.403	0.425	0.448	0.462	148	Low
Cote d'Ivoire	0.369	0.403	0.412	0.425	0.416	0.428	156	Low
Mali	0.252	0.279	0.292	0.312	0.346	0.386	164	Low
Niger	0.234	0.254	0.246	0.256	0.262	0.277	172	Low

Source: United Nations via Du Toit (2002)

Table 2: Nominal and real income per capita, South Africa

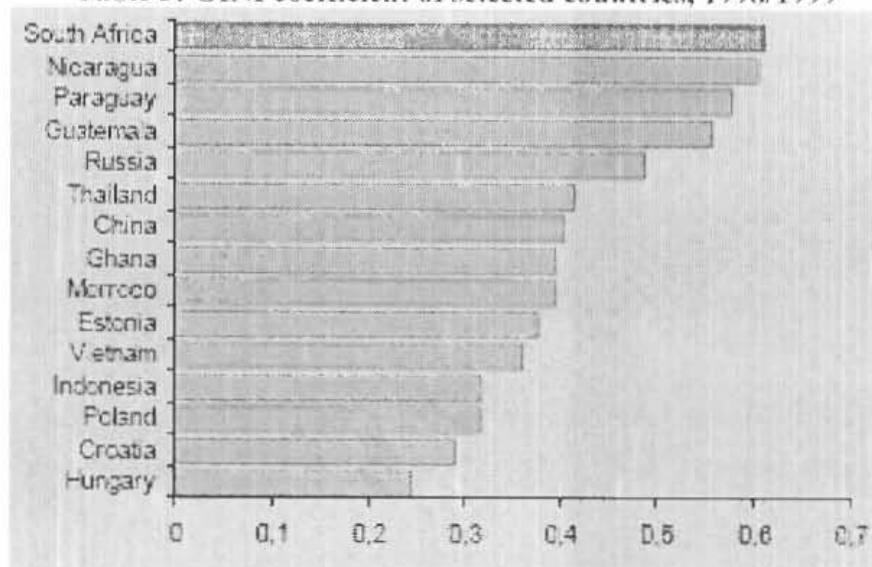
	Nominal		Real ¹	
	Rand	% change	Rand	% change
1960-64	329	5.4	11 400	3.6
1965-69	481	7.1	13 502	2.5
1970-74	731	12.3	14 796	1.5
1975-79	1 341	11.1	15 174	-0.4
1980-84	1 821	14.7	15 821	0.0
1985-89	5 448	15.4	15 023	-0.5
1990-94	10 239	11.4	14 067	-2.2
1995-99	16 473	8.4	14 126	0.4
2000-01	21 306	8.1	14 304	0.8

¹ At constant 1995 prices

Source: SARB via Du Toit (2002)

Income distribution is generally measured via the Gini coefficient, which is also expressed as ratio from 0 to 1. Du Toit (ibid) notes a high coefficient in South Africa relative to other countries (refer Table 3). relating this trend to an uneven skill distribution and high unemployment.

Table 3: GINI coefficient of selected countries, 1998/1999



Source: World Bank via Du Toit (2002)

Given the country's relatively high Gini coefficient relative to international peers, it is unsurprising that income and resource redistribution has remained a central economic and fiscal policy goal. The dilemma facing the South African tax system is balancing the progressiveness thereof (i.e. its ability to concentrate the burden of taxation on higher-income taxpayers) with the need for specific provisions to achieve other macroeconomic goals; the latter would invariably require focus on the aforementioned higher-income taxpayer demographics.

It is arguable that the current income tax code achieves the goal of progressiveness, and thus the goal of income and wealth redistribution, to an acceptable degree. Notwithstanding this, the introduction of CGT in South Africa in 2001 (viewed as a “wealth tax” by the South African government) may be considered to be a measure that runs counter to the goal of income equality¹.

Marcus (2006) notes the effect of the recently-introduced South African CGT on the equity of South African citizens. As noted above, CGT is commonly seen as a tax on the wealthy, thereby aiding equitable income and wealth redistribution amongst economic participants and allowing for reinvestment into poorer areas. Notwithstanding this, the international research collated in Marcus’s study indicates that such a tax may affect poorer demographics as much as richer ones. He quotes the “bunching” problem, a phenomenon prevalent where a progressive rates structure is in place and capital gains are taxed via an inclusion in taxable income (as is the case in South Africa). In this manner, capital gains earned by low-income taxpayers result in their aggregate taxable income being forced into higher income tax brackets, resulting in higher overall tax liabilities and generally reducing the equity effects of the aforementioned rates structures. It is noted that this may be mitigated via certain exclusive tax provisions.

Marcus (ibid) also notes the effect of CGT on the investment returns of senior citizens and low-income investors; such investors usually have less diversification within investment portfolios, and rely on the income from and growth of such investments for

¹ Prior to the introduction of CGT, gains or losses made on the disposition of capital assets were not subject to taxation.

retirement funding and the maintenance of living standards. Portions of investment growth are irrecoverably lost to a tax on capital gains, reducing overall equity. Once again, this may be mitigated by targeted tax provisions for certain demographics, or via measures such as the inflation indexing of asset base costs for capital gains purposes. These measures are currently not provided for in the South African tax system.

3.3.2 Economic growth and productivity

Du Toit (2002) reports deterioration in overall growth performance, making the achievement of economic development increasingly difficult. Tables 4 and 5 provide indications of economic activity and development (on a country comparative basis) and changes in GDP over time respectively.

Du Toit (ibid) remarks that efforts to increase potential economic growth in South Africa would require a combination of policy measures designed to, *inter alia*, improve the competitiveness of exports, develop technological and human factors to increase the competitiveness and efficiency of production, encourage high levels of domestic savings and capital formation, and ensure a continuous net inflow of foreign capital. Furthermore, economic growth will require an expansion of the skilled labour force, as well as the existing economic infrastructure.

Table 4: Indicators of economic activity and development

	Gross national income PPP \$ billion		Value added by sector (average annual real % change)								Classification of economy ³
			Agriculture ¹	Industry ²				Services			
				Manufacturing		Total					
	1996	2000	1980-90	1990-2000	1980-90	1990-2000	1980-90	1990-2000	1980-90	1990-2000	
China	4 047	4 351	3.9	4.1	11.1	13.4	11.1	13.7	13.5	9.0	LME
India	1 493	2 375	3.1	3.0	7.4	7.0	6.9	6.4	7.0	3.0	LI
Brazil	1 023	1 243	2.5	3.2	1.6	2.1	2.0	2.6	3.3	3.0	UME
Mexico	714	861	0.5	1.8	1.5	4.4	1.1	3.5	1.4	2.9	UME
Korea, Republic	596	815	3.0	2.0	12.1	7.5	11.4	6.3	8.4	5.7	UME
Turkey	380	459	1.3	1.4	7.9	4.8	7.8	4.3	4.4	3.7	UME
South Africa	280	392	2.9	0.6	1.1	1.2	0.7	1.9	2.4	2.6	UME
Thailand	402	384	3.9	2.1	5.5	6.4	9.5	5.3	7.3	3.7	LME
Philippines	255	348	1.0	1.6	0.2	3.0	-0.9	3.3	2.8	4.1	LME
Denmark	116	141	2.6	2.9	3.3	2.1	2.0	2.0	1.9	2.6	HI
Norway	100	133	0.1	2.4	0.2	2.3	4.0	3.9	2.9	3.4	HI
Singapore	82	100	-5.3	-1.6	6.6	7.1	5.2	7.9	7.6	7.8	HI
Morocco	90	99	6.7	-0.5	4.1	2.7	3.0	3.2	4.2	2.8	LME
China	31	37	1.0	1.4	3.9	-3.3	3.3	2.6	3.7	3.7	LI
Czechia	24	24	2.2	3.6	3.0	1.4	3.9	-0.3	2.1	0.2	LI

¹ Includes forestry and fishing. ² Composite mining, manufacturing, construction, electricity, water, and gas.

³ Classification according to 2000 GNI per capita in US\$. The income groups are low income (LI), \$755 or less; lower middle income (LME), \$756-42 500; upper middle income (UME), \$42 500-49 200; and high income (HI), \$49 200 or more.

Source: World Bank via Du Toit (2002)

Table 5: South African GDP by sector

	Real % change					% of total				
	1963-69	1970-79	1980-89	1990-99	2000-01	1963-69	1970-79	1980-89	1990-99	2000-01
Primary sector	3.5	-0.4	0.6	-0.1	0.3	10.9	15.5	19.1	11.5	10.5
Agriculture	2.6	2.9	2.6	-0.2	2.0	10.1	7.3	5.3	4.1	3.1
Mining	4.2	-1.3	-0.4	-0.2	-0.9	10.8	11.2	13.7	7.4	7.4
Secondary sector	5.8	4.6	0.3	1.0	3.2	27.5	29.2	30.0	27.6	24.2
Manufacturing	5.0	4.7	1.3	0.6	4.0	21.7	21.6	22.6	20.9	18.5
Electricity	6.3	6.9	5.0	3.8	-1.5	2.4	2.5	3.7	3.5	2.6
Construction	5.2	2.6	-1.9	-0.4	3.3	3.4	4.1	3.5	3.2	2.9
Tertiary sector	5.3	4.1	2.7	2.3	3.1	51.6	52.3	50.3	60.9	65.3
Trade	7.3	3.7	2.5	1.3	3.9	14.1	13.2	12.2	14.0	13.1
Transport	5.6	5.7	1.3	4.3	4.4	9.7	9.3	8.6	9.0	9.9
Finance	5.7	3.4	3.1	3.4	4.8	11.6	13.3	12.5	16.5	20.3
Community services	3.6	4.0	3.3	1.3	0.2	16.2	15.7	17.5	21.4	22.0
General government	4.7	4.2	3.0	1.0	-0.6	9.2	10.7	12.4	16.2	16.1
Other	1.5	3.4	3.7	2.3	2.9	7.0	5.6	5.1	5.2	5.9
Total GDP	5.6	3.1	1.6	1.6	2.8	R7.4 bn	R25.6 bn	R322.7 bn	R433.9 bn	R447.6 bn

Source: SARB via Du Toit (2002)

The development of intangible capital, including technological development, is crucial to growth in productivity. With productivity as a direct or indirect fiscal policy goal, tax policy should focus on the promotion of such development via measures such as research and development (R&D) incentives, the deduction of R&D expenses, and allowances for

the amortisation of certain capitalised expenditures in this regard. Auerbach (2005) notes that tax measures should distinguish between broad and specific provisions regarding intangible capital (i.e. the provision of tax incentives across a spectrum of industries as compared to a focus on one or a few), tax measures that affect “new” or “old” capital, and whether such measures should be temporary or permanent.

Leibfritz, Thornton and Bibbee (1997 – hereafter LTB) cite a number of international studies on the effect of taxation on economic growth. Easterly and Rebelo (1993) and Plosser (1992) find that increasing rates of income tax have negative effects on per capita economic growth, although the measurement of such distortions is difficult. Koester and Komendi (1989) find similar results to the aforementioned study, but note that growth is not affected when tax rates are controlled relative to income levels. In other words, tax policy measures which decrease the overall progressiveness of tax systems often lead to increased growth.

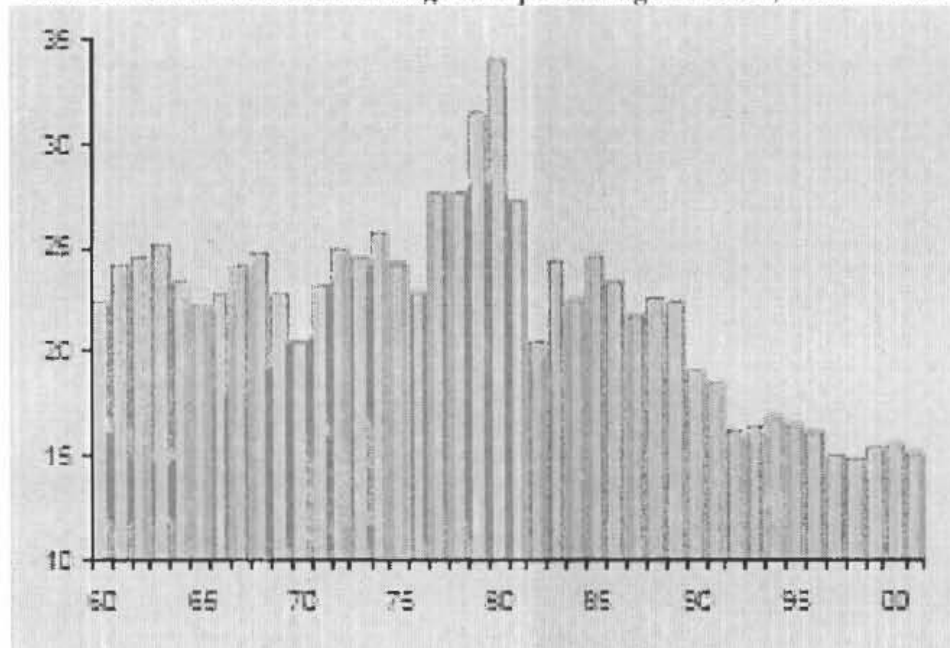
It is noted that economic growth is not a standalone economic goal; growth is affected by a number of factors, most of which are discussed in this section.

3.3.3 Domestic savings, investment and capital formation

Du Toit (2002) reports on two measures of domestic savings (comprising household, corporate and government data), namely gross savings (including the consumption of fixed capital) and net savings (excluding such). In both cases, measures of saving to GDP

exhibit sharply decreasing trends – such trends are attributable mostly to households and government.

Table 6: Gross domestic savings as a percentage of GDP, 1960 – 2000



Source: SARB via Du Toit (2002)

Du Toit ascribes the negative trend in household savings to increases in taxes (both direct and indirect), high inflation, low or negative real deposit rates, high levels of household debt and currency depreciation. Dissaving by the government is ascribed to an insufficient tax base that was unable to finance increasing government expenditure requirements. It is noted, however, that the latter has improved dramatically since the new millennium, and is expected to completely reverse in the near future.

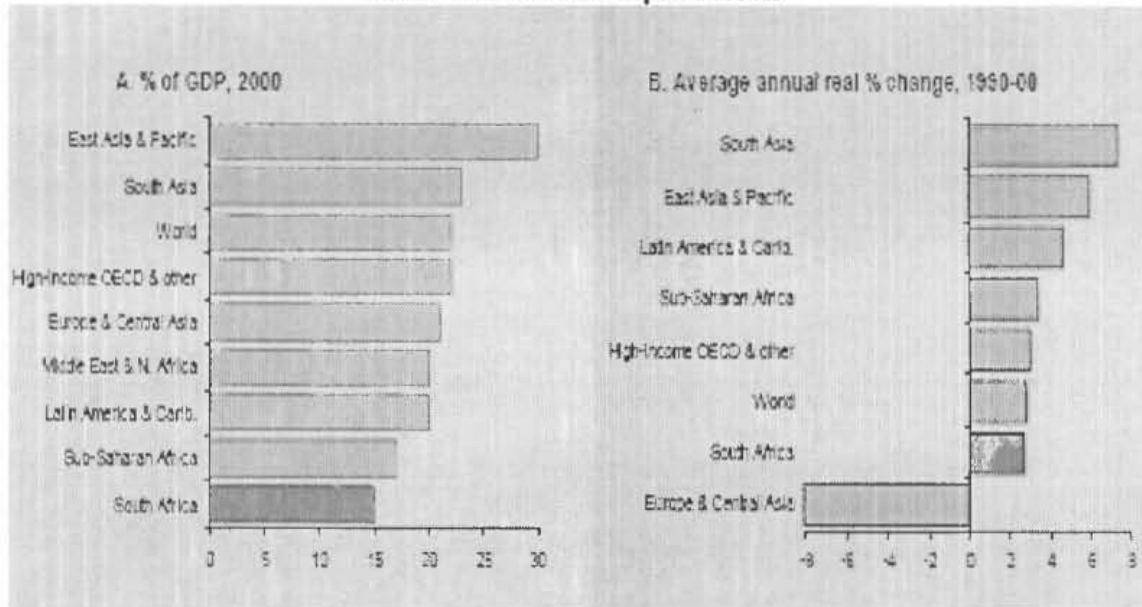
ABSA (2003) notes that historically high tax burdens have precipitated a move from household savings to household debt, in order to maintain living standards. While fiscal policy measures have been put into place to decrease the overall tax burdens on

individuals, the reversal of the aforementioned trend has not occurred to any satisfactory degree.

ABSA notes further that the international trend of moving away from the direct taxation of income and wealth to the indirect taxation of consumption is unlikely to occur in South Africa due to political considerations, notwithstanding the negative effects of direct taxes on savings and investment. The introduction of CGT in 2001 did not serve to assist in decreasing the overall tax burden on South African households.

Du Toit (ibid) states that gross fixed capital formation is generally measured against GDP, with an international standard of approximately 25%. He reports a South African ratio that has remained below the aforementioned standard for approximately two decades. The net measure thereof, which excludes the consumption of fixed capital, has also shown dramatic decreases during the same period.

Table 7: Domestic capital stock



Source: World Bank via Du Toit (2002)

The abovementioned decreases (according to Du Toit) are attributable to, *inter alia*, historical political instability, increased crime, adverse development in the labour sector (see below), decreased domestic savings and capital flight in the 1960's and 1990's. As noted above, decreasing levels of capital formation impede South Africa's ability to increase its capacity for economic growth.

The comments noted by Du Toit and ABSA indicate that taxation is at least a factor in the low level of household savings in South Africa. As South Africa favours current-period consumption over the financing of future expenditure, tax provisions should be targeted to encourage savings. Once again, the introduction of CGT tends to run counter to this goal.

Marcus (2006) notes the probable effect of the South African CGT on levels of domestic private equity financing, particularly venture capital targeted at private enterprise and entrepreneurial development. Where investors are subject to higher rates of taxation on capital gains (as was proved to be the case in South Africa, where companies and individuals provide nearly two-thirds of such capital), domestic capital investment is discouraged via increased costs of capital and the dilution of rates of return.

Marcus (ibid) also notes higher taxes on long-term capital growth (including the time value of money) relative to current consumption. Tax levels would tend to encourage high levels of current consumption, rather than long-term savings and investment. As with the effect on venture capital, less saving decreases the amount of economic capital available for investment and development. This point is supported in the international context by LTB.

LTB refer to the tendency of domestic investors to divert investment capital overseas, into “tax haven” locations, thus decreasing domestic levels of the aforementioned capital. Foreign investments of this nature are generally difficult for tax authorities to track, resulting in possible tax evasion. It is noted that South Africa’s exchange control regime would somewhat mitigate this effect.

It is noted that the South African tax system operates on a “worldwide” basis, taxing foreign income and capital gains in the same manner as income and capital of a domestic

nature². This, coupled with South Africa's exchange control regime, would serve to mitigate domestic capital flight.

The current composition of South Africa's corporate tax system, coupled with the tax-exempt status of dividend income in the hands of the recipients (due to the taxation of corporate distributions at the corporate level – see below) would tend to skew investor tendencies to high-dividend, rather than high growth, stocks. Marcus (ibid) notes that the aggregate effect of these factors has negative consequences for small- to medium-sized enterprises and entrepreneurial activity. Overall, the core South African policy goal of increased enterprise development, and concomitant increases in competition is negatively affected.

3.3.4 Labour productivity and job creation

Du Toit (2002) reports worsening domestic labour market conditions, including productive employment. This negative trend is ascribed to low economic growth relative to increases in the population, decreasing levels of capital formation, mismatches in the demand and supply of skilled labour, and the persistent emigration of skilled labourers, as well as factors relating to labour legislation and the influence of trade unions. The author notes that these trends have led to an increased level of employment in the informal sector, which generally cannot be easily regulated or taxed.

² The South African tax system also includes a credit for taxes paid in foreign jurisdictions, with such credit limited to an amount calculated using the ratio of foreign income to total income. This ensures an equitable basis for the taxation of foreign income.

Table 8: Non-agricultural formal sector employment in South Africa (annual averages)

	% change				% of total			
	1970-79	1980-89	1990-99	2000-01	1970-79	1980-89	1990-99	2000-01
Mineral	1.2	0.7	-1.6	-2.9	15.2	14.6	11.3	8.8
Manufacturing	2.5	1.0	-1.8	-2.1	28.4	27.8	27.8	27.2
Construction	1.2	1.4	-4.8	-3.2	8.7	7.5	6.4	4.7
Trade	2.0	0.9	0.4	-0.2	15.9	14.0	14.8	18.7
Finance	3.0	4.3	1.8	-2.6	2.3	2.8	3.8	4.2
Other	15.2	1.6	-2.9	-1.8	2.0	2.9	2.5	2.4
Private sector	2.3	1.0	-2.1	-1.7	72.6	69.6	66.6	65.9
General government	6.0	3.6	0.2	-0.3	30.2	24.4	29.3	30.8
Public business enterprises	2.4	-2.5	-4.5	-3.9	7.2	6.0	4.1	3.3
Public sector	5.0	2.4	-0.4	-3.1	27.4	30.4	33.4	34.1
Total employment	3.0	1.4	-1.6	-2.2	4 385 363	5 468 243	5 192 241	4 695 981

Source: SARB via Du Toit (2002)

In addition to the above, Du Toit notes that the composition of household income has tended to move away from remuneration and towards income from property, farming or unincorporated enterprises. This trend is generally predicated by the high levels of unemployment in the formal sector.

ABSA (2003) notes that improved employment levels would be an “essential element” in creating a sound, growing economy in South Africa. Increased unemployment tends to exacerbate the skewed income distribution already prevalent in the domestic case, and is thus wholly undesirable.

It is recognized that fiscal policy measures would probably not be sufficient to improve labour market conditions – this is due to the fact that many of the factors noted (such as rigid labour laws and the lack of education and training) are beyond the scope of influence of the government’s fiscal tools. However, an improvement in many of the

areas noted above (such as increased capital formation and economic growth) will lead to increased productive employment. As evidenced by the discussion in those areas, fiscal policy is capable of effecting such improvements.

Furthermore, it is noted that tax incentives to skilled foreign labour would serve to attract them to South Africa. Such incentives could include preferential tax rates, specialised credits or rebates, or the allowance of tax deductions not normally available to South African employees by virtue of the provisions of section 23(m) of the Act. Notwithstanding this, it would be preferable for South Africa to train its own skilled workers rather than to import skilled labour. Skills development levy contributions, which are outside the scope of this study, are intended to aid this process.

Auerbach (2005) comments that a progressive tax structure (although more equitable in terms of income and resource redistribution) may have a negative impact on worker productivity, as “success” is effectively subject to a higher tax rate. This effect is based on the assumption that workers will provide labour up to the point where income taxes become too high to bear – an assumption that may prove invalid in reality.

Marcus (2006) quotes various sources supporting the negative effects of CGT on job creation, specifically the positive correlation between capital inputs and the level of productive labour, and links between CGT and decrease in the real wage rate. The introduction of CGT to the South African tax system was thus a measure that runs contrary to the core fiscal policy goal of increased productive labour - the achievement of

this goal is crucial in South Africa, particularly given the consistently high domestic levels of unemployment.

3.3.5 Foreign direct investment and foreign trade

ABSA (2003) notes the relatively low levels of foreign direct investment (FDI) in South Africa, and the need for improvement in this area. Furthermore, increased economic growth is facilitated by increased levels of foreign trade. ABSA recommends a move away from subsidies and tariffs, or demand-side incentives, to decreased local production costs through supply-side measures. According to ABSA, the following are specific examples of areas where improvement is needed:

- the abolition of the remaining exchange controls;
- reduced levels of taxation;
- the privatisation of state assets to create investment opportunities for foreign partners;
- effective supply-side measures to improve productivity;
- a more flexible labour policy and a better trained and disciplined workforce;
- reduced levels of crime and corruption, and
- increased socio-economic and political stability.

The effect of tax policy on a nation's competitiveness is generally dependent on which component of competitiveness is under scrutiny (Auerbach, 2005). If the focus is on the international goods or services market, exchange rates would likely affect competitiveness to a greater extent than fiscal policies; the latter, however, may be

focused in such a manner so as to increase the international competitiveness of a nation's products relative to those of other countries, via export incentives or import duties.

LTB state that while statutory tax rates affect the location of financial capital, it is effective tax rates that affect the location of FDI. Decreases in statutory corporate tax rates (such as the decrease in the South African corporate tax rate in 2005) would not necessarily attract foreign capital inflows. The effect of secondary taxes such as STC (see below) may still serve as a deterrent to FDI by keeping effective tax rates high relative to other jurisdictions. It is necessary to determine whether financial capital or FDI is desired, and to tailor tax policies around that determination³.

Once again, the introduction of CGT to the South Africa tax regime is relevant. Marcus (2006) notes the negative effect of CGT on foreign direct investment. International research indicates that taxes on capital gains generally lead to increases in relative costs of capital, whilst simultaneously decreasing the ability of foreign investors to efficiently disinvest from the country imposing such a tax. These effects result in the discouragement of foreign investment, which is a critical component of economic growth.

Another disincentive to productive FDI is the South African STC, which is imposed on most distributions to shareholders. At the time of writing, the South African Government has announced the "replacement" of STC with a system which generally has the same

³ In short, countries wishing to increase foreign investment in existing firms will decrease statutory tax rates, while countries wishing to increase FDI will concentrate measures on lowering the overall effective tax rate (LTB).

effects as the outgoing taxation regime, although the incidence thereof rests with the recipient shareholder, rather than the entity making the distribution. Unlike other forms of investment income such as rentals and interest, dividends are appropriations of corporate profits that are already subject to taxation, and taxes such as the STC therefore amount to an increase in the effective rate of corporate tax for foreign investors. Furthermore, the inability of foreign investors to deduct the dividends paid at the time that such dividends are distributed on to other shareholders for the purposes of calculating the STC tax base (a relief measure available to South African companies under the STC regime) leads to further inequity and the discouragement of FDI.

3.3.6 International competitiveness

Du Toit (2002) quotes the definition for international competitiveness set out by the International Institute for Management Development (IMD, 1996) as follows: *“[international competitiveness is] the ability of a country to create added value and thus increase national wealth by managing assets and processes, attractiveness and aggressiveness, globality and proximity, and by integrating these relationships into an economic and social model”*.

In order to achieve true competitiveness, the IMD advocates a strong legislative environment, a robust economic structure, high levels of investment in infrastructure, domestic savings and investment, creating an attractive environment for foreign direct investments and a broad tax base.

In South Africa's case, Du Toit notes that positive domestic factors towards international competitiveness (such as a rich supply of resources, high levels of development in certain sectors and a well-developed economic infrastructure) are counterbalanced by weaknesses such as extensive social needs, a relatively small tax base, poor labour market conditions and low levels of foreign direct investment.

Table 9: Overall competitiveness ranking (49 countries compared)

	1998	1999	2000	2001	2002		1998	1999	2000	2001	2002
USA	1	1	1	1	1	Czech Republic	37	37	40	35	29
Finland	6	3	4	3	2	Japan	20	24	24	26	30
Singapore	2	2	2	2	3	Portugal	29	27	29	34	33
Canada	8	10	5	4	6	Thailand	41	36	35	38	34
Sweden	16	14	14	6	11	Brazil	35	34	31	31	35
Australia	12	11	10	11	14	South Africa	42	43	43	42	39
Germany	15	12	11	12	15	Philippines	32	31	37	40	40
UK	13	19	16	13	16	Mexico	34	35	33	36	41
New Zealand	17	17	15	21	19	India	38	42	39	41	42
Chile	27	21	25	24	20	Poland	44	40	38	47	45
Korea	26	41	28	28	27	Indonesia	40	47	44	49	47
Hungary	25	26	26	27	28	Argentina	30	33	41	43	49

Source: IMD via Du Toit (2002)

The improvement of South Africa's overall competitiveness will depend on its ability to improve income distribution, socio-economic conditions, labour market conditions and employment levels, and to increase domestic savings and levels of capital formation.

It is clear that, as with economic growth, international competitiveness is more an effect than a cause. The factors listed above all serve to affect South Africa's ability to compete internationally, and taxation's role therein must be carefully considered.

3.4 Measuring the efficiency and effectiveness of tax systems – international benchmarks

This study does not seek to reproduce the work performed by Gallagher and his predecessors, but rather seeks to apply the methodology to the South African context. Not all benchmarking indicators identified would be useful or applicable for the purpose of this study - in some cases, the areas measured are beyond the scope of the study, while in others the data is simply not available.

An evaluation of the abovementioned benchmarks in the domestic context facilitates an appraisal of the South African tax system against the internationally accepted characteristics set out above. South Africa's performance relative to these benchmarks allows me to conclude on the likelihood of the government's achievement of fiscal policy goals given the relative effectiveness of the tax system.

Perry (1997) correctly states that the comparison of international tax systems is useless if performed without consideration of country-specific factors and characteristics. Where possible, my qualitative evaluation of South Africa's tax system is qualified by the discussion of domestic characteristics and government goals which affect the components of the tax system.

I present below a description of the indicators considered pertinent to this study. In each case, I identify the main system characteristic or characteristics (as discussed in section 3.1 above) measured by the benchmark. The analysis performed in the South African context, as well as the benchmarking results for South Africa measured against international observations, are presented below.

Number of taxes comprising the top 75% of receipts (revenue collection): this benchmark provides a measurement of the level of concentration and robustness of the tax base. As noted above, effective revenue collection requires a stable and diversified tax base, which should be robust in the face of economic changes. Where a country relies on few tax sources, revenue collection is easily affected by overall economic downturns and changes in taxpayer behaviour. The effect of exogenous factors on revenue collection may also be amplified – an example would be resource taxes (such as the proposed windfall taxes on petroleum companies), which may be affected by changes in commodity prices and demand.

The following table represents the number of taxes comprising at least 75% of South African tax receipts for the 2000/2001 to 2004/2005 fiscal years (information collated from South African National Treasury Annual Reports for the fiscal years in question):

Table 10: Composition of tax revenues, 2000/2001 to 2004/2005 fiscal years

	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005
Taxes on income and profits	125,418	150,028	167,900	175,900	199,700
Persons and individuals	85,293	90,390	94,300	99,200	111,000
Companies	29,169	42,354	55,700	61,700	70,800
Secondary Tax on Companies	4,028	7,163	6,300	6,100	7,500
Other	6,928	10,121	11,500	8,800	10,400
Taxes on property	3,979	4,629	5,100	6,700	9,000
Domestic taxes on goods and services	79,020	86,853	97,600	110,200	131,900
Value-added tax/sales tax	54,402	61,057	70,100	80,700	98,200
Specific excise duties	9,127	9,797	10,400	11,400	13,100
Levies on fuel	14,495	14,923	15,300	16,700	19,200
Other	996	1,076	1,600	1,500	1,400
Taxes on international trade and transactions	8,227	8,680	9,600	8,400	13,300
Stamp duties and fees	1,562	1,767	1,600	1,400	1,200
Miscellaneous	2,290	305	400	-	-
Total tax revenue	220,496	252,262	282,200	302,600	355,100
Income tax (personal and corporate) and VAT:	168,864	193,801	220,100	241,600	280,000
As a % of total receipts	76.58%	76.83%	77.99%	79.84%	78.85%
Number of taxes forming top 75% of receipts:	3	3	3	3	3

Source: South African Revenue Service. Calculations author's own.

As shown above, income tax (from persons and corporations) and VAT consistently comprise more than 75% of total revenue collected. On the basis that personal and corporate income tax are two separate sources of revenue for benchmarking purposes (as the two would be affected by different economic factors), South Africa would have three tax sources compared to the international benchmark of six reported by Gallagher (2004)⁴. The country's tax base is thus too concentrated relative to international best practice. This result should, however, be considered in conjunction with the results of the tax revenue adequacy testing contained in section 7 of this study. The generally positive results of the latter indicate that the negative effects of a concentrated tax base are mitigated by the relationship between tax revenues, tax bases and GDP.

⁴ It is noted that Gallagher does not specify which taxes comprise the international benchmark. The focus of the benchmark is not on the specific sources of tax revenue, but on the dispersion thereof throughout the national tax bases.

An extended version of Table 10 is contained in Appendix B. The extended table indicates the contribution of each category of tax to total revenue, and includes the tax to GDP ratio (tax ratio) for each period.

Notwithstanding the above, it is important to note that the above represents an aggregation of a number of revenue streams into the “income tax” category. Income tax from individuals comprises taxes collected in respect of employment income, investment income and capital gains; corporate income tax includes taxes on corporate profits, investment income and capital dispositions. South Africa’s performance in this benchmarking category may therefore overstate the concentration of the tax base, and thus understate the robustness thereof. The nature and character of South African tax revenues are analysed and discussed in greater detail in section 6.

Limited exemptions from income tax (equity, neutrality and revenue collection): a high number of tax exemptions will, in most cases, decrease the overall equity of the tax system (where such exemptions are aimed at particular groups of taxpayers). Where tax exemptions apply to certain types of transactions or income, the neutrality of the system is affected, as taxpayers will automatically direct tax planning to take advantage of the tax saving afforded by the exemption. Overall, the ability of the government to predict and collect tax revenues will be adversely affected.

For the purposes of this benchmark, I consider the exemptions contained in section 10 of the Income Tax Act No. 58 of 1962 (“the ITA”). Specific exclusions contained elsewhere in the ITA are not considered.

Although section 10 contains more than fifty exemptions, the nature of those exemptions (rather than the quantity thereof) requires consideration for the purposes of benchmarking. The effectiveness of the tax system would only be compromised where the exemptions result in bias towards a particular demographic of taxpayer, or where they encourage tax planning which results in a loss of tax revenue.

The exemptions afforded by the ITA apply to the following categories of taxpayers and transactions:

- certain government officials and employees (domestic and foreign), and political parties;
- certain entities involved in specified research or environmental rehabilitation activities, or other activities which benefit the country;
- public benefit (or non-profit) organisations approved by the South African Revenue Service (SARS);
- benefit funds taxed in terms of the Tax on Retirement Funds Act, 1998 (TORFA);
- specified compensation, pension and social security benefits;
- interest income earned by a non-resident;
- a specified amount of foreign dividends or interest income earned by a resident;
- dividends received in respect of domestic shares (subject to certain exclusions);

- copyright royalties taxed in other jurisdictions;
- specified government subsidies, grants, rebates and allowances;
- allowances paid to employees to purchase uniforms for employment purposes;
- relocation fees paid to employees;
- certain amounts relating to employee share schemes;
- any bona fide scholarship or study bursary, and
- a specified amount of lump sums received for retirement, resignation, illness or superannuation.

It is clear that the exemptions granted by the ITA are intended to relieve the tax burdens on certain demographics of taxpayers (such as pensioners and government employees). On the whole, exemptions of this nature enhance the equity of the tax system and are not open to exploitation via tax planning. Other categories noted above are intended to avoid double taxation or encourage certain beneficial activities. Despite the number of exemptions granted, it is therefore safe to conclude that the majority of those exemptions do not adversely affect the overall effectiveness of the South African tax system by detracting from its equity, neutrality or ability to generate revenue.

Notwithstanding the above, the exemption of local dividends has indisputably led to increased tax planning and income shifting, in order to take advantage of an entirely tax exempt income stream. The existence of the South African STC somewhat mitigates the loss in revenue which could result from such tax planning, by increasing the effective tax

rate on dividends to a level which approaches the top tax rate on individuals⁵. At the payee level, however, the attraction of a tax-free income stream has led to most tax planning structures including a dividend stream rather than interest or rentals, decreasing the neutrality of the tax system.

Lastly, although not specifically stated as an exemption, the ITA includes only a specified portion of capital gains in the taxable income of a taxpayer (25% for individuals, and 50% for companies and trusts). Although an improvement in neutrality over the total exemption of capital receipts prior to the introduction of the South African CGT, the partial inclusion rates also negatively affect neutrality and encourage taxpayers to categorise receipts and accruals as capital, rather than revenue. Marcus (2006) notes that the introduction of CGT in South Africa did not significantly decrease the opportunities for South African taxpayers to arbitrage by exploiting the capital gains inclusion rate. Marcus also noted the lack of significant growth in government revenue since the introduction of CGT.

It is noted that the international best practice presented by Gallagher (2004) indicated whether or not exemptions were limited on a “yes” or “no” basis, without providing the number of exemptions that may be considered limited (further justifying the focus of the above analysis on the nature of South African exemptions, rather than the number

⁵ STC is levied at a rate of 12,5% on net dividends paid by a South African corporation. When coupled with the South African corporate tax rate of 29%, the effective tax rate on income paid as corporate dividends is approximately 37% - close to the rate which would be paid had the income been initially earned by an individual.

thereof). This is likely due to the differences between tax legislations from country to country.

Limited number of tax rates (certainty and simplicity): where possible, a country's structure of tax rates should comprise as few tax rates as possible per category of taxation. This type of rates structure improves the ability of taxpayers to calculate tax liabilities with certainty, and increases the overall simplicity of the tax system. The number of different tax rates should also not be high enough to encourage taxpayer arbitrage.

The South African tax system contains a number of tax rates, including separate rates for:

- corporations (29%);
- individuals (based on progressive tax brackets, ranging from base rates of 18% to 40%);
- branches of foreign corporations (34%);
- trusts (40%);
- donations (20%);
- estate duty (20%);
- STC on corporate distributions (12,5% and 10% from 1 October 2007);
- Retirement fund tax⁶ (9%); and
- VAT (14% or 0%).

⁶ It is noted that RFT was abolished with effect from 1 March 2007.

Although the list of rates may seem overcomplicated, the number of tax rates per category of taxpayer is low enough to avoid over-complication of the tax system. Taxpayers should be in a position to calculate their tax liabilities with certainty, according to the type of entity under consideration. Furthermore, as the rates structure discriminates between the type of entity paying tax, rather than the transactions undertaken, it is unlikely to significantly encourage taxpayer arbitrage.

As was the case with the number of income tax exemptions, Gallagher's benchmark provides a "yes" or "no" answer rather than a number of tax rates. However, the domestic rate structure may be considered more simplified than, for example, Canada, which has a number of corporate tax rates.

VAT rate, zero-rating and exemptions (economic growth and revenue collection):

where VAT is employed as an indirect tax, the tax should result in a broad tax base with limited exemptions. Gallagher (2004) notes that although there is no "correct" VAT rate, the important consideration is whether or not there is a single tax rate. In terms of international best practice, a country's tax system should include a single VAT rate (usually around 14%) and the zero-rating of exports. As with the preceding benchmark discussed above, the VAT system should contain limited exemptions, ensuring a broad and stable indirect tax base.

The zero-rating of exports mentioned above is a key consideration in economic growth, as it affects the international competitiveness of exports in the world market.

The Value-added Tax Act No. 89 of 1991 (“the VAT Act”) provides for the exemption of the following types of supplies of goods and services (VAT input claims are not permitted against exempt supplies):

- certain financial services (such as the charging of interest);
- the supply by any non-profit association not for gain of any donated or manufactured goods or services;
- residential accommodation;
- certain accommodation to employees;
- the letting of land outside the Republic and improvements thereto;
- management services by a body corporate, share block company or housing development scheme to its members financed out of member contributions;
- certain transport services;
- certain educational services;
- the supply of any goods or services by an employee organization to any of its members to the extent that the consideration for such supply consists of membership contributions, and
- the service of caring for children by a crèche or an after-school care centre.

The following goods and services are zero-rated for VAT purposes (VAT input claims are available in respect of these items, but VAT is charged at 0%):

- exports;
- certain supplies related to foreign-going ships or aircraft;
- an enterprise or part of an enterprise sold as a going concern;

- supplies of gold, in specified forms, to the South African Reserve Bank, the South African Mint Company (Proprietary) Limited or any bank registered under the Banks Act, 1990 (Act No. 94 of 1990);
- supplies used or consumed for specified agricultural, pastoral or other farming purposes;
- fuel levy goods;
- crude oils, when supplied for the purpose of being refined for the production of fuel levy goods;
- certain foodstuffs;
- certain gold coins;
- unmixed and unblended kerosene intended for use as fuel for illuminating;
- any prospecting right, mining right, exploration right, production right mining permit or retention permit as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), wholly or partly renewed in terms of that Act;
- the goods are supplied by a vendor to the extent that the consideration for such goods is from donor funds granted under any international agreement to which the Government of South Africa is a party;
- certain international transport services and related insurance;
- Certain expenses relating to a foreign-going ship or foreign-going aircraft;
- Certain services supplied to non-residents;
- certain services and agreements relating to intellectual properties utilised outside of South Africa;

- services carried on by welfare organizations;
- services supplied in connected with exported properties or property leased outside the Republic;
- services for which the consideration is donated under an international agreement to which the Government of the Republic is a party;
- specified vocational training of employees;
- services that are deemed to be supplied to a public authority or local authority, and
- services that are deemed to be supplied by virtue of section 8(5A) of the VAT Act

The key international benchmarks for a VAT system are satisfied in the South African context – the system is effectively a single-rate rate (with that rate within the observed level), with exports zero-rated. Insofar as the broadness of the VAT tax base is concerned, the exemptions and zero-rated transactions afforded by the legislation are, as in the case of income tax, targeted at specific demographics and transactions in a manner which increases the overall equity of the system whilst not eroding the tax base nor increasing the propensity for tax arbitrage. A number of the exemptions and zero-rated goods and services arise from the socio-economic situation in South Africa, and thus increase the equity of VAT (generally considered a regressive tax).

Furthermore, as noted above, international best practice supports the exemption of items such as exports (to encourage international trade and make domestic goods more

competitive in international markets) and financial services (to avoid the “cascading” of indirect taxes, which may result in the same income being taxed on multiple occasions.

Administrative cost of taxation (economy of collection): this benchmark is a direct test of the cost incurred by government to collect taxes versus the actual revenue collected. As in indicator, it does not serve to pinpoint inefficiencies in the revenue agency or collection system, but rather provides an overall measure of this characteristic which can be compared to other countries. A number of factors affect the administrative cost to the government of revenue collection, including the overall development of the country and the resources of the taxing body.

The following table sets out the administrative costs incurred by SARS for every R100 of tax collected, for the 2000/2001 to 2004/2005 fiscal years:

Table 11: Cost of tax administration and collection per R100 of tax collected

2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006
R0,87	R0,93	R1,02	R1,18	R1,21	R1,18

Source: SARS Annual Reports, 2000 to 2005 & South African Reserve Bank. Calculations author's own.

In comparison, Gallagher (1995) and Piza (1994) note figures of between \$2,19 and \$3,86 per \$100 collected in countries such as Nicaragua, Guatemala, Peru, Tanzania and El Salvador, and between \$0,83 and \$1,47 for countries such as the United States, Columbia, Spain, Canada and the United Kingdom. Notwithstanding that the aforementioned international data was collected during the 1990's, they provide a

comparative basis for South Africa's five-year performance in the subsequent decade. Although South Africa has shown increasing costs of collection relative to the growth in tax revenues, the results for South Africa may be considered efficient based on international benchmarks.

4 Quantitative Analysis – Average Effective Tax Rates

4.1 Introduction to the AETR methodology

This section describes the AETR methodology developed and revised in international studies for various aspects of tax system analysis and comparison. I present the underlying economic model and original AETR methodology, as well as the refinements and extensions utilised in subsequent studies. I also present certain criticisms of the methodology, as well as support for it, based on international research and applications of the AETR methodology. I discuss the relevance of the drawbacks identified for the purposes of the South African study in a subsequent section of this report.

As noted above, AETRs measure the relationship between revenue collections and tax bases; the latter are calculated using National Accounts data for the country in question. This methodology was first suggested by noted supply-side economist Robert Lucas (1990, 1991) and expanded on by Razin and Sadka (1993). However, the extension of the methodology, and first major application thereof, was developed and applied by Mendoza, Razin and Sadka (1994). Certain assumptions in the Mendoza *et al* methodology were deemed unrealistic by other researchers, which led to the development of amended methodologies. These are discussed further in subsequent subsections of this study.

4.2 Original methodology - Mendoza et al

4.2.1 Underlying economic model

For ease of reference, the notations utilised by Mendoza *et al* (hereafter MRT) are utilised for the purposes of describing their methodology.

MRTs' methodologies for calculating AETRs are underpinned by a simplified macroeconomic model. The authors posit an economy consisting of households, firms and government. The economy contains three goods, namely labour, capital and consumption (denoted l , k and c respectively). Households produce capital and labour, earning returns in the form of investment income (interest, dividends, rent and royalties), capital gains and remuneration. Firms consume the labour and capital produced by households, and produce the consumption good consumed by households. Government finances its expenditure (g) in each of the three goods by levying taxation on the aforementioned consumption at rate t_c , as well as the income returns from labour and capital at t_l and t_k .

The economy described above contains two price components; the pre-tax price paid by the respective producers (q) (i.e. the factor income earned by suppliers of the factor inputs), and the post-tax price paid by the consumers (p) (consumption is financed by after-tax income). It is clear from the description of these price components that the difference between the two is taxation, or $(p-q) = t$. The proportionate tax rates thus equate to t/q for each good.

In MRTs' notation, the vectors applicable to the economy are thus as follows:

- household consumption is (h_c , h_l and h_k)
- government expenditure is (g_c , g_l and g_k)
- producer pre-tax prices are (p_c , p_l and p_k)
- consumer after-tax prices are (q_c , q_l and q_k)
- tax rates are (t_c , t_l and t_k)
- proportionate or ad valorem tax rates are $tx_i^7 = t_i/q_i$ for ($i = c, l, k$)

MRT also quantify the consumption vector for the model economy as ($h-e-b$), where e and b are endowments and government transfers of the three goods. The taxation vector t thus applies to the aforementioned consumption vector. MRT also note that the consumption factor for labour is always negative – households produce, rather than consume this factor, and government is unable to make transfers thereof.

Using an output of y , profits are represented by qy . MRTs' AETRs, effectively the proportionate tax rates for the three economic goods, are thus denoted as follows:

$$tx_c = \frac{p_c y_c - q_c y_c}{q_c y_c} \quad (1)$$

$$tx_l = \frac{q_l(e_l - h_l) - p_l(e_l - h_l)}{q_l(e_l - h_l)} \quad (2)$$

⁷ Author's own notation.

$$tx_k = \frac{-q_k y_k - (-p_k y_k)}{-q_k y_k} \quad (3)$$

MRT explain that the numerators in (1), (2) and (3) represent the difference between the pre- and post-tax (i.e. producer and consumer) measurements of consumption, labour and capital. This difference is approximated by actual collections of tax revenues by revenue authorities.

The denominators of the equations represent the pre-tax income from the three economic goods – in effect the tax bases for each good. The AETRs, represented by tx_i above, are thus calculated as the ratio of tax collections to the available tax bases. It is thus clear that the determination of accurate measures for the AETR calculations depend entirely on the accuracy of the measures used to reflect the tax revenues and associated tax bases. These measures are discussed in more detail below.

MRT state that the use of pre- and post-tax measures of income in the manner described above effectively aggregates the information relating to the nuances of a particular tax system (for example, credits, deductions, allowances and exemptions). Further research into these measures criticised this aggregation – the criticisms and suggested improvements are discussed in subsequent sections of this chapter.

MRT also note the sensitivity of their measures to “...*long-term fiscal returns and short-term policy changes to statutory taxes, tax credits, deductions and exemptions*”. Despite

this shortcoming, the methodology represents a relatively robust method of international tax system comparison.

4.2.2 Relation of National Accounts data to the macroeconomic tax rates

MRT utilised international data published by the OECD to fit macroeconomic measures of tax revenue and National Accounts for the then G7 countries to the equations formulated as above. The former was sourced from the OECD's *Revenue Statistics*, whilst the latter was drawn from the organisation's *National Accounts, Vol. II, Detailed Tables*. The authors noted the inadequacy of sources such as the IMF, due to the use of central government figures only (excluding regional or local taxes), as well as the use of budgeted, rather than actual, tax collections. The key advantage of the OECD data was the "disaggregated" nature thereof, which allowed for the provision of detailed measures for households, corporations and government.

The key to the variables drawn from the OECD sources was presented as follows⁸:

⁸ As will be seen below, these codes are not utilised for the purposes of the South African study. They are included for ease of reference with respect to the significant international studies, which generally utilised these codes and definitions.

Box 1: OECD data categories utilised by MRT

Revenue Statistics:

1100	Taxes on income, profit and capital gains of individuals
1200	Taxes on income, profit and capital gains of corporations
1300	Unallocated taxes on income, profit and capital gains
2000	Total social security contributions
2200	Employer's contributions to social security
3000	Taxes on payroll and workforce
4100	Recurrent taxes in immovable property
4400	Taxes on financial and capital transactions
5110	General taxes on goods and services
5121	Excise taxes

National Accounts:

C	Private final consumption expenditure;
G	Government final consumption expenditure;
GW	Compensation of employees by producers of government services
OSPUE	Operating surplus of private unincorporated enterprises
PEI	Household property and entrepreneurial income
W	Wages and salaries
OS	Total operating surplus of the economy.

Source: Mendoza *et al* (1994)

AETR on consumption

Utilising the above, MRT define the AETR on sales of consumption goods for the economy as follows:

$$tx_c = \left[\frac{5110 + 5121}{C + G - GW - 5110 - 5121} \right] * 100 \quad (4)$$

For the purposes of equation (4), MRT assume a household purchasing a consumption good and paying a proportionate, or *ad valorem*, tax. The numerator in (4), representing the tax collections from consumption, comprise the aggregate of general taxes on the

consumption of goods and services (e.g. VAT in South Africa and the United Kingdom, and GST in Canada) and excise taxes (taxes measured in terms of business done, not levied on property or income) – the indirect tax collections of government. These collections represent the difference between the valuations of consumption at pre-tax and post-tax prices (refer equation (1) above).

The denominator in (4) represents the theoretical tax base giving rise to the tax revenue in the numerator, calculated in terms of the theoretical basis represented in equation (1). MRT define the tax base of consumption as the pre-tax value thereof; in other words, the post-tax consumption expenditure of households and government less the indirect tax revenue included in the numerator (per MRT, taking advantage of the fact that nominal consumption expenditure is valued after tax for the purposes of inclusion in National Accounts). The inclusion of government consumption expenditure and the exclusion of government wage expenditure were necessary for MRTs' approximation due to nuances of the data reported by the OECD; specifically, the inclusion of indirect taxes paid by government and the fact that such taxes are not applicable to government wage expenditure.

AETR on labour

As noted above, MRT define the effective tax on labour income as the difference between the pre- and post-tax valuations thereof. The authors note the difficulty in obtaining this information, citing the aggregated information presented by revenue

authorities as the most common problem in this regard⁹. For the purposes of their study, the authors assume that labour and capital income sources are taxed at the same rates. Other researchers have criticised this assumption (see below); I discuss this aspect of the AETR formula in the South African context elsewhere in this study.

MRT also note the existence of other labour taxes, including social security contributions and secondary taxes on payroll. The authors refer to Barro and Sahasakul (1986) in this regard.

MRT derive equation 5 below to compute the average tax rate applicable to households (on total income):

$$tx_h = \left[\frac{1100}{OSPUE + PEI + W} \right] * 100 \quad (5)$$

As discussed above, the numerator consists of all taxes paid by individuals in respect of income, profits and capital gains – the difference between pre- and post-tax valuations of individual income. The denominator is the total of all pre-tax income receipts by households, including labour returns (salaries and wages), income returns from capital property (dividends, interest, rent and royalties) and entrepreneurial or unincorporated business net income (in other words, the entire tax base available in respect of households). The ratio calculated in (5) is then applied to wage income, and forms part of the formula for the AETR on labour income as follows:

⁹ Revenue sources typically present total figures of individual income, which are not easily divisible into the returns from labour and capital factors.

$$tx_l = \left[\frac{tx_h W + 2000 + 3000}{W + 2200} \right] * 100 \quad (6)$$

Equation 6 represents the ratio of taxes paid on labour income (including social security contributions and payroll taxes) to the total tax base of labour income (comprising wages and salaries, and expanded by MRT to include social security contributions by employers). The latter are included due to their exclusion from household income for tax purposes in most tax jurisdictions.

AETR on capital

As noted above, MRT assume that capital income is taxed at the same rate as income from labour; the household tax rate calculated in (5) above is thus applied to capital income for the purposes of calculating the tax thereon. The capital income figure is defined as the aggregate of the operating surpluses of private, unincorporated business enterprises, and income earned directly from households from entrepreneurial activities and capital property.

Operating surpluses are often used as macroeconomic proxies for pre-tax profit income. The term describes the net value added in business after deducting fixed capital consumption (including depreciation), employee compensation, and indirect taxes applicable to producers (net of subsidies). The rationale behind the use of this measure in the capital income ratio arises from the fact that pre-tax net profit represents the return on

business capital earned by households – in other words, active business income (as opposed to the passive investment income described in the “PEI” category above.

The tax revenue from capital income is expanded to include corporate tax revenues, recurrent taxes on property, and taxes on financial and capital transactions.

The denominator, or applicable tax base, for the purpose of this ratio is the net operating surplus of the overall economy. The AETR is thus calculated as follows:

$$tx_k = \left[\frac{tx_h(OSPUE + PEI) + 1200 + 4100 + 4400}{OS} \right] * 100 \quad (7)$$

It is noted that a distinction exists between gross and net operating surpluses, referring to the inclusion or exclusion of fixed capital consumption. Debates have arisen amongst researchers over which measure should be applied for the purposes of calculating AETRs. MRT favour the net measure for this purpose; the alternative is discussed in the following subsection.

4.3 Carey and Tchilinguirian – refining the MRT methodology

Carey and Tchilinguirian (hereafter CT) published a 2000 study on behalf of the OECD in which they updated MRTs’ methodology and addressed certain perceived weaknesses therein. The aforementioned weaknesses relate to specific assumptions underlying the MRT methodology which are generally agreed by CT to be unrealistic, thus misstating the implicit tax ratios calculated.

The first assumption addressed by CT was that all income earned from self-employment was capital in nature – in other words, a return on the capital invested by households in unincorporated enterprises. CT state that this assumption led to an understatement in the AETR on capital, and an overstatement in the AETR on labour as calculated by MRT. This aspect of the MRT methodology was modified to assume that households receive both labour and capital income from self-employment.

In addition to the above, CT performed a sensitivity analysis to measure the effect of relaxing the assumption that capital income and other household income are taxed at the same rate on the ratios calculated¹⁰. The authors also address the possibility of preferential tax treatment for income from pension funds and life insurance policies, the imposition of jurisdictional measures to eliminate the double taxation of dividends and the possibility that capital income may be totally exempt from taxation.

CT also provide certain caveats regarding the utilisation of the MRT methodology. The OECD has expressed warnings against the use of AETRs (refer OECD (2000a) and OECD (2000b)), stating the use of aggregated National Accounting and tax revenue data may “...generate misleading indicators of the tax burdens on taxpayers”. The use of micro-data (i.e. individual taxpayer data) is therefore suggested as a more effective method of calculation, particularly where the ratios are utilised for the purpose of evaluating fiscal policy measures. Overall, however, OECD (2000a) concludes that

¹⁰ This assumption is valid in the South African context (excluding capital gains, which are subject to certain inclusion rates). This is discussed in more detail in a subsequent section of this study.

retrospective AETR measures are a more effective method of assessing tax burden than alternatives such as marginal effective tax rates or tax to GDP ratios.

As noted above, MRT rely on the association of tax revenue streams with economic measures of underlying tax bases. The assumptions addressed by CT were necessary to align the tax base and revenue categories. The first MRT assumption seen as unrealistic by CT was that households pay the same effective tax rate on capital and labour income – an assumption necessitated by the inability of national revenue figures to distinguish between taxes paid by households on capital income, and those paid on labour income.

The MRT equations above incorporated this assumption by assuming that the ratio of taxes on labour to total taxes paid by households equates to the ratio of labour income to total income (refer equations 5, 6 and 7 above). CT note that OECD observations on the tax systems of various countries invalidate this assumption – some countries have dual tax rates for capital and labour income, apply preferential tax treatment to income from pension funds and life insurance policies, and include measures to provide relief from the double taxation of dividends (i.e. at the firm level, and subsequently at the investor level upon appropriation of after-tax firm profits). Certain countries also have relief measures relating to the taxation of capital income received in respect of owner-occupied fixed property.

CT also note the following drawbacks resulting from the use of National Accounts data in the AETR calculations:

- As noted above, no distinction is made between the capital and labour components of self-employed income (MRT avoid this problem by categorising all self-employment income as a return on capital invested).
- Definitions applicable to data categories (such as the categorisation of corporate and non-corporate income) may not correspond to the data categories utilised by revenue authorities to report total tax collections (such as corporate income taxes).
- The measures utilised for calculating the consumption of fixed capital (for example, depreciation), which is a component of the operating surplus measures utilised in the AETR equations, are not comparable across countries.
- The National Accounts data utilised in the calculations may reflect the effects of tax avoidance or evasion motivators created by country-specific tax systems (CT cite the example of favourable tax rates on capital income, as compared to other income types). CT are of the view that the potential for income switching and the resultant tax avoidance weakens the ability of AETR measures to compare the estimates of tax bases relating to labour and capital.
- The National Accounts data utilised in the MRT and amended CT methodologies were in the process of amendments relating to the data categories reported – this

was cited as a possible impediment to effective international comparisons of AETR measures for the countries under consideration.

- National Accounts data may not reflect specific concepts relating to tax bases that are addressed in a country's tax legislation. CT provide the example of capital gains on the disposition of property – whilst these amounts may be taxable in terms of taxing legislation, and thus form part of the capital income tax base, National Accounts data of operating surpluses would not include these gains (as no value is added).
- Tax revenue data represents the cash value of income collected by governments, whereas National Accounts data may be presented on the accrual basis. This would give rise to timing differences between the two types of data, although these differences would generally reverse over time.

It is important to note that some of the above are only relevant when an AETR analysis is utilised for the purposes of international comparison.

4.3.1 Amended measure for the AETR of households

CT begin with the AETR equation formulated by MRT, presented as equation (5) above. The former note, however, that the measure of OSPUE utilised in the denominator of the equation includes imputed rentals on owner-occupied housing. Furthermore, the measure of PEI includes the abovementioned income from pension funds and life insurance policies.

4.3.2 Amended measure for the AETR on labour income

CT describe a number of problems with the treatment of social security payments in the MRT methodology. The first of these problems is the double-counting of employee contributions in equation (6) above (these contributions are included in W in the numerator, and are separately included in the tax base in the denominator). Furthermore, the measure of 2000 in the numerator of (6) includes social security contributions of the self-employed (due to the classification of data in the National Accounts series). However, the income relating to these contributions (i.e. income from self-employment) is included in the tax base of the AETR on capital income (as noted above, MRT assign all income from self-employment as capital income). CT also note that the denominator of (6) does not reflect the ability of taxpayers to deduct self-funded social security contributions. Finally, CT note that social security contributions which cannot be allocated to employees, employers or self-employed individuals are allocated by MRT to labour income, even though these contributions may be paid out of either labour or capital income.

CT address the abovementioned issues by adjusting the numerator and denominator of the equations relating to the AETR on labour income. The authors present five new equations, as follows:

$$tx_h = \frac{1100}{OSPUE + PEI - 2300 + W - 2100 - 2400} \quad (8)$$

$$\alpha = \frac{W - 2100}{OSPUE + PEI - 2300 + W - 2100} \quad (9)$$

$$\beta = 1 - \alpha \quad (10)$$

$$tx_l = \frac{tx_h * (W - 2100 - \alpha 2400) + 2100 + 2200 + \alpha 2400 + 3000}{WSSS} \quad (11)$$

$$tx_k = \frac{tx_h * (OSPUE + PEI - 2300 - \beta 2400) + 2300 + \beta 2400 + 1200 + 4100 + 4400}{OS} \quad (12)$$

Social security contributions by employees (denoted by category 2100 above) are excluded from the tax base in equations (8) and the tax revenue measure of equation (11) (the revised AETR ratios for household and labour income, respectively). This revision addresses the double-counting of such contributions, as noted above (refer (8)), and takes into account the deductibility of such contributions for tax purposes (refer (11)). Furthermore, the deductibility of contributions is also addressed by the exclusion of social security contributions of the self-employed (denoted by category 2300) in the tax base measure for the AETR on household income in (8), and the pro-rated income measure in the numerator of the AETR on capital in (12), the revised equation for the AETR on capital income.

Unallocated social security contributions, denoted by category 2400, are included in the numerator of (8), as logically they must be paid by households. These contributions are assumed to be generally deductible for tax purposes, and are thus also excluded from the denominator in (8). Note also that CT exclude category 2400 contributions from the numerators of (11) and (12) – the pro-rata shares of labour and capital income (α and β) are thus applied to income amounts that exclude these contributions.

CT note the replacement of the denominator in (6) with the denominator in (11). The measure WSSS in the National Accounts Series represents the total compensation of employees, including pension contributions paid by employers. CT state that such employer contributions are a significant component of total labour earnings in certain of the countries forming part of their study – the exclusion thereof by MRT therefore causes the denominators of (11) and (12) to differ from GDP. This should not be the case, as the operating surplus of the economy plus total labour income of employed persons should equate to the total value added as represented by GDP.

4.3.3 Amended measure of the AETR on capital

One of the drawbacks of the MRT method as noted above was the inclusion of the consumption of fixed capital utilised in the AETR calculation for capital income (via the use of a net operating surplus measure as a proxy for the tax base). CT note that differences in depreciation rates (largely attributable to difference in the expected useful lives of assets) across international borders lead to disparities in capital tax ratios for the purposes of international comparison. CT therefore suggest the use of gross operating surplus, rather than the net measure thereof, in the denominator of equation (7). Gross operating surplus is measured before the deduction of fixed capital consumption, and therefore provides a more effective measure for comparative purposes. The authors note, however, that the use of the gross measure would tend to overstate capital income.

Furthermore, CT expand the numerator of the AETR on capital by including all taxes on property, including wealth taxes, taxes on gifts and estate duties. These types of taxation were excluded by MRT in their original methodology.

4.3.4 Amended measure for the AETR on consumption

CT note that the deduction of indirect tax revenues in the denominator of the AETR equation for consumption (refer equation (4) above) results in the reflection of the true ratio of indirect taxes to total prices inclusive of such taxes. CT use the example of a 20% VAT rate – this would increase the price of a good by 20%, but would constitute only 16,67% of the total tax-inclusive price (i.e. $20/120$). The exclusion of indirect taxes from the denominator expresses the overall ratio at the pre-tax (i.e. 20% level), rather than the post-tax level.

4.3.5 CTs' proposed methodology for the division of income measures into capital and labour components

As mentioned above, CT disagree with MRTs' assumption that all self-employment income should be designated as a return to capital, and thus categorised as capital income for the purposes of calculating AETRs. The authors argue that such income should be split between capital and labour components, whilst recognising the inherent difficulty in making such an assignment. CT therefore make an assumption that self-employed individuals "earn" wages at the same level (net of social security contributions) as average employees. The National Account measures utilised in the CT and MRT studies contain four factors which can be utilised to approximate the "wages" of self-employed individuals, namely W (wages and salaries of dependent employment), 2100 (social security contributions of employees), EE (dependent employment) and ES (the number of self-employed individuals). Total wages from self-employment (WSE) are thus calculated as follows:

$$WSE = \frac{ES * (W - 2100)}{EE} \quad (13)$$

Having regard to the above, the calculation of α in (9) above must be modified to include WSE in the numerator of the ratio (representing the reassignment of self-employed wage income from capital to labour). Furthermore, equation (11) is modified to include the WSE measure in the expression for total labour income in the numerator. Lastly, the reallocation of self-employment wages and social security contributions from capital to labour income is achieved via adjustments to the denominators of equations (11) and (12). These modifications are reflected in the following revised equations:

$$\alpha = \frac{W - 2100 + WSE}{OSPUE + PEI - 2300 + W - 2100} \quad (14)$$

$$tx_l = \frac{tx_h * (W - 2100 + WSE - \alpha 2400) + 2100 + 2200 + 2300 + \alpha 2400 + 3000}{WSSS + WSE + 2300} \quad (15)$$

$$tx_k = \frac{tx_h * (OSPUE + PEI - WSE - 2300 - \beta 2400) + 1200 + \beta 2400 + 4100 + 4400}{OS - WSE - 2300} \quad (16)$$

CT submit that the revised equations in (14) to (16) provide a better measure of the AETRs on capital and labour income than the MRT methodology – however, the wages of self-employed individuals are still likely to be understated. Increases in W (total labour earnings) increase the numerator of (15) proportionately less than the denominator

thereof, leading to an overstatement in the ratio. The ratio calculated in (16) would thus be slightly understated as a result.

4.3.6 Expansion of the consumption tax base

CT note that MRT exclude government wage expenditure (GW) in equation (4) above – as previously noted, this adjustment is rationalised by the fact that government wages are typically not subject to indirect taxation. However, CT note further that the services provided by government are typically exempt from indirect taxation even when privately provided. International comparisons would thus result in countries with publicly provided services having overstated consumption AETRs relative to those with private provision of the same services (due the decreased denominator in the case of the former).

CT address the above by representing the AETR on consumption with the tax base equal to total national consumption expenditure, including government wage consumption. The authors further enhance international comparability by expressing the base as a gross measure which includes indirect taxes. The equation is thus expressed as follows:

$$tx_c = \frac{5110 + 5121}{CP + CG} \quad (17)$$

CT mention that the numerator in (17) includes indirect taxes payable by industries which produce supplies which are exempt of these taxes. In many cases, such as with VAT, the suppliers would not be able to claim back the indirect taxes payable in respect of goods or services used to produce exempt supplies (for example, the financial services industry).

CT note that this problem is generally difficult to adjust for in practice, due to a lack of micro-data. Equation (17) would thus overstate the AETR on consumption, as the tax revenue reflects indirect taxation on investment goods not included in the tax base. The authors argue, however, that this overstatement is not likely to be significant.

CT also expand the numerator of the AETR by a number of consumption taxes hitherto ignored by MRT. These taxes include excise taxes, fuel levies, customs and import duties, taxes on specific services and taxes on the use of goods and performance activities. Taxes on exports, investment goods and international trade and transactions are excluded.

4.3.7 Adjusting for certain treatments of capital income

CT dispute MRTs' assumption that all capital income of households is taxed at the same rate as labour income. This assumption ignores the factors noted above, such as the preferential treatment of pension fund and life insurance earnings, relief measures against the double taxation of dividends, and the non-taxation of imputed rentals on owner-occupied housing. These factors, and their impact on the AETR methodology, are discussed below.

CT note that earnings from pension funds and life insurance policies generally receive preferential tax treatment in the OECD countries included in their study. These amounts are usually tax deductible on contribution, tax-exempt during the investment accumulation period, and then taxed in the hands of the recipient upon distribution. CT state that this treatment is widely referred to as exempt-exempt-taxed (EET). Where such

treatment is relevant, the final value of the earnings from such investments would only be affected by changes in the tax rate and differentials in the time value of money (as contributions would generally be deductible at the same rate as investment returns are taxed). This result would be the same where other tax treatments are relevant, such as non-deductible contributions and non-taxable payouts (TEE).

MRTs' assumption regarding capital income would generally understate the AETR on household income, having regard to the treatment of life insurance earnings as discussed above. This occurs because National Accounts data attributes such earning to households as part of the measures used to approximate the tax base in equation (8), with no corresponding tax revenue in the numerator. Furthermore, due to the allocation mechanisms of equations (11) and (12), this misstatement is extended to the AETR on capital income, which would be overstated¹¹.

CT note that adjustment for this misstatement is difficult, given the lack of data regarding the types of income under consideration. However, the authors recommend a method of approximating such income, utilising an assumed rate of return and data on the financial assets of life insurance companies and pension funds. This approximation provides an estimate of household income from these sources, which may be deducted from household earnings in the relevant AETR equations.

¹¹ All such earnings should be allocated to capital income; however, the AETR methodology allocates between labour and capital income of households on a pro-rata basis. The misstatement resulting from the lack of adjustment for the preferential treatment of pension fund and life insurance earnings is thus distributed to the AETRs on labour and capital, with opposite effects.

In most countries included in the scope of CTs' study, dividend income receives preferential treatment in the hands of households; this treatment included dividend imputation systems, low- or flat-rate systems, or both. These measures avoid the double taxation of dividend income at both the corporate and household level, and invalidate MRTs' implicit assumption that dividend income is taxed at the same rate as other income in the hands of households. Once again, this results in an understatement in the AETR on households and labour income, and an overstatement in the AETR on capital income.

The abovementioned problem can be adjusted for by removing the dividend receipts of households from the tax base comprising the denominator of (8), and accounting for taxes paid on dividend income in the numerator of (12). CT cite a lack of tax revenue data for the purposes of this adjustment, although data relating to dividend receipts is often widely available.

4.3.8 Limitations of the AETR methodology per CT

CT state that AETR methodologies, which produce inherently retrospective implicit tax rates, may not be as suitable as marginal effective tax rates for the purposes of evaluating the effect of taxes on savings, investment and employment behaviour. This is especially true where tax policies have recently changed, or where such a change is anticipated in the near future. The methodology is most effective when used to approximate historical tax burdens.

Furthermore, the tax treatment of business losses may lead to misstatements in AETR measures (particularly where businesses are allowed to carry losses forward for future set-off against taxable income). Where losses are incurred, AETR measures for capital income may be overstated – the opposite would occur when they are applied to taxable income in subsequent periods, leading to a reduction in tax payable. Generally, however, these differences would average out over time, allowing for more realistic measures when looking at average business cycles or trend analysis.

Changes in inflation also have a misstating effect on AETR measures, particularly the AETR on capital. This may occur due to tax policy measures based on historic costs; for example, real depreciation allowances would be understated, whilst gains on sales of inventory would be overstated. CT also note that households would be subject to taxation on the inflation premium inherent in interest payments, although a corresponding deduction would be made by the entities incurring the interest payments.

Another factor affecting the accuracy of implicit tax rates arises where a country employs a residence-based system of taxation – in other words, where residents are taxed on their world-wide income. In such cases, the denominators of the equations would include such income; however, the numerators thereof would not include the foreign taxes paid. This would generally result in an understatement of implicit tax rates. This effect is mitigated where tax systems include a credit or rebate against domestic tax liabilities in respect of foreign taxes paid.

CT caution against the blithe interpretation of AETR estimates, citing the problems with the methodology and the difficulties in adjustment for these. Due to a lack of comparable data, CT ultimately presented their results on the basis that all capital income was taxed at the same rate, ignoring the adjustments discussed above. The authors therefore advise that corroborating data are analysed in conjunction with AETR measures, where such measures are utilised for policy decisions or for an analysis of the effects on taxation of macroeconomic variables.

CT's caveats do not include a discussion of the inability of AETR measures to correct for the distortionary effects of taxation. Where tax measures have significantly distorted the incentives of taxpayers, AETR calculations would produce inaccurate measures of a country's tax burdens. For example, where certain items are not subject to consumption taxes (as is the case in South Africa), taxpayers would be incentivised to purchase those items instead of other items. The AETR measure for consumption would include the sales of the untaxed goods in the denominator, but would have no related taxes in the numerator, leading to an artificially low measure of the consumption tax burden. Another example could be high tax burdens on income, which could distort taxpayer behaviour and lead to non-compliance or understated income reporting. It may therefore be necessary to examine the level of distortions caused by tax measures, and to consider these levels when evaluating AETR measures.

4.4 Martinez-Mongay (2000) - Approach by the Directorate-General for Economic and Financial Affairs of the European Commission (ECFIN)

Martinez-Mongay (2000) (hereafter MM) explains and discusses the methodology and data sources employed by ECFIN for the purposes of calculating AETRs on households, capital and consumption for the fifteen Member States of the European Union (EU). These calculations have historically been used by ECFIN to analyse the effect of tax reforms on the tax burdens of the aforementioned member states. The ECFIN findings were published in a paper titled “*Structures of the Taxation Systems in the European Union*” (denoted EC2000 by MM, and referred to as such for the purposes of this study).

The approach utilised in EC2000 was, according to MM, conceptually similar to that proposed by MRT. However, the countries analysed and data categories utilised differed from the MRT and CT approaches; furthermore, MM notes that the criteria employed in the EU study largely differed from the two preceding studies.

The first of the critical differences mentioned above arose from the methodology utilised to calculate household taxes on labour income. EC2000 did not calculate an implicit tax rate on household income; the taxes thereon were readily available as measures of the personal labour income withholding tax applied by the Member States. Alternatively, information was provided by the countries in question, with breakdowns of taxes paid by individuals on dependent labour and other sources. The availability of this information

allowed for more exact measures than those calculated by MRT or CT via, the replacement of the $(tx_h * W)$ term with actual tax revenues on labour income.

Another divergence from the original methodology arose from the calculation of the AETR on capital income. MM reports that, whilst the denominator in the equation comprised the net operating surplus measure utilised in the preceding methodologies, there were significant differences between the ECFIN and MRT/CT AETR measures. A key reason for these differences arose from the method utilised to calculate household capital income taxes (refer below).

MM also notes significant and important differences in the methodologies utilised by ECFIN and MRT to calculate the tax base for the AETR on consumption. ECFIN utilised an after-tax measure for the aforementioned tax base. This is discussed in more detail below.

4.4.1 Personal Income Effective Tax Rate (ECFIN approach)

MM defines taxable labour income as the difference between total wages and non-wage labour costs, such as social security contributions. Furthermore, households pay personal tax on the difference between total capital income and corporate, wealth and property taxes. MM thus posits that the effective taxation of capital should include the portion of personal taxes paid by capital income. This necessitates an apportionment of personal income taxes into two factors, namely labour and capital.

The data sources available to ECFIN for the purposes of the abovementioned apportionment were the aggregate series of direct taxes on income and wealth available from the AMECO database of the European Commission, and the Revenue Statistics database of the OECD. Neither data series was sufficient for the purposes of the apportionment; the former provided data on personal labour income taxes, personal capital income taxes, corporate income taxes and taxes on property and wealth (denoted in aggregate as the DTRV series). The OECD Revenue Statistics database provided data on “*Taxes on income, profits, and capital gains*” for individuals and corporations, and revenue from property taxes. The first category included taxes on both labour and capital income.

The ECFIN approach utilised the OECD data to separate the DTRV series into the three categories of taxes presented by the OECD. This decomposition was achieved by establishing a ratio of each OECD tax category to the total of all three categories, and applying the ratio for each category to the DTRV data. Once this has been performed, the decomposed value of DTRV for personal income taxes must be split into the labour and capital components required for the AETR analysis.

ECFIN retains MRTs’ assumption that all personal income (i.e. both labour and capital) is taxed at the same rate. However, the denominator of the tx_h ratio in equation (5) is redefined as the net operating surplus of the economy reduced by labour income from self-employment and other direct taxes on capital (corporate, property and wealth taxes, as noted above). This is a markedly different approach from (5), which utilises the

aggregate of operating surpluses of unincorporated private enterprises. household property and entrepreneurial income and total wages and salaries for the same purposes. ECFIN also defines the term “labour effective tax base” (LETB), which is an extrapolated compensation measure calculating by multiplying the total national compensation of employees by the ratio of all employed persons to the number of salary - and wage-earning employees.

ECFIN thus defines the personal income tax base (PITB) as follows:

$$\text{PITB} = \text{LETB} - \text{NWRW} + \text{NOS} - (\text{LETB} - \text{COEL}) - \text{CORV} - \text{PWRV} \quad (18)$$

where:

- LETB is the labour effective tax base (calculated in the manner described above);
- NWRW is the ratio of total social security contributions to GDP;
- NOS is the net operating surplus of the overall economy;
- COEL is the total compensation of employees; and
- CORV and PWRV are the decomposed components of the DTRV (total direct tax series) relating to corporate taxes and taxes on property and wealth.

Equation (18) may be condensed to

$$\text{PITB} = \text{COEL} + \text{NOS} - \text{NWRV} - \text{CORV} - \text{PWRV} \quad (19)$$

To summarise, MM defines the personal income tax base as consisting of the sum of total labour costs and the operating surplus of the economy, less the imputed wages of the self-employed and excluding corporate taxes and taxes on property and wealth.

ECFIN therefore measures the effective tax rate on personal income (PITR) as the ratio of the decomposed component of DTRV relating to personal taxes (PIRV) to PITB as calculated above.

MM notes two significant differences between the ECFIN approach and the methodology adopted by MRT and CT. The first is the inclusion of corporate net savings in the personal income tax base calculated by ECFIN; this assumes that all corporate profits are distributed to individuals in the form of dividend income, an assumption which is very unlikely to be true¹². This would result in an over- or underestimation of the tax base, depending on the nature of such savings. The second difference is a broader definition of the property taxes excluded from the tax base. Despite these differences, MM notes that the variables utilised in the ECFIN approach are updated and provided more frequently than those utilised by MRT and CT, allowing for less of a lag in calculating AETR measures.

4.4.2 Effective tax rate on labour (ECFIN approach)

ECFIN defines the effective tax rate on labour income as the ratio of the sum of non-wage labour costs (social security contributions and payroll taxes) and personal income

¹² Notwithstanding the validity thereof, where dividends are not subject to double taxation the assumption that all firm profits are distributed would not result in a significant misstatement of the implicit personal tax rate.

tax revenues attributable to labour income to pre-tax labour income. The denominator of the ratio is total compensation, or LETB as defined above. This ratio is expressed as follows:

$$LETR = \frac{NWRV + PITR * (LETB - NWRV)}{LETB} \quad (20)$$

Equation (20) may also be modified to reflect the effective tax rate on employed labour only, as follows:

$$LITR = \frac{(ELRV + PITR * (COEL - ELRV))}{COEL} \quad (21)$$

The term ELRV in (21) is defined by ECFIN as (NWRV*SELR), where SELR is the ratio of social security contributions of employed persons, employers and taxes on payroll and workforce to total social security contributions (including those of the self-employed and unallocated contributions) and the aforementioned taxes.

It is noted that both (20) and (21) exclude the imputed wages of the self-employed; this corresponds to MRTs' methodology, but is in contrast to that of CT.

4.4.3 Effective tax rate on consumption (ECFIN approach)

MM refers to the MRT equation for the calculation of the consumption tax base, defining the tax revenues as the consumption “wedge” (i.e. the difference between pre- and post-

tax consumer prices). ECFIN also suggests an alternative definition, where the denominator of the equation (usually the pre-tax producer price) is replaced with the post-tax consumer price. This is referred to as the consumption implicit tax rate, and is expressed by ECFIN as the ratio of indirect taxes to the aggregate of private and government final consumption expenditure (less the consumption by government employees). MM stresses that the results obtained by using this method are as informative as those obtained using the pre-tax measure.

4.4.4 The effective labour tax wedge

The labour tax wedge is defined as the gap between the real labour costs of a firm and the real post-tax consumption wage of the worker (Layard, Nickell and Jackman, 1999). MM states that the tax wedge arises because workers are taxed through social security contributions and income taxes, and then again in the form of indirect taxes when the wages are utilised for consumption. The tax wedge can thus be calculated as the difference between the real producer wage (i.e. gross wage deflated by the producer's price, or W_p) and the real consumer wage (gross wage less social security contributions and personal taxes deflated by the consumer's price, or C_p).

$$\text{wedg} = (W_p - W_c)/W_p \quad (22)$$

MM define the producer and consumer prices as P_p and P , and t_c as the tax rate on consumption. The following relationships are then derived:

$$w_p = W_p/P_p \quad (23)$$

$$w_c = W_c/P_c \quad (24)$$

$$1 - t_c = P_p/P_c \quad (25)$$

W_p and W_c are the nominal gross and consumer wages respectively. MM further defines the relationship between the nominal gross and consumer wages as:

$$W_c = (1-t_i) (W_p - ssc) \quad (26)$$

where t_i is the personal income tax, and ssc is the total of social security contributions paid per unit of labour.

MM calculates the effective average non-wage labour costs (NWLC) as the ratio of NWRV (total social security contributions to GDP) to LETB as defined above. In terms of the labour wedge, NWLC can thus also be expressed as the ratio of social security contributions to the nominal gross wage, or:

$$nwlc = ssc/W_p \quad (27)$$

Utilising the relationships above, the labour tax wedge can thus be calculated as:

$$\text{wedge} = 1 - (1 - \text{nwlc})(1 - t_i)(1 - t_c) \quad (28)$$

If relating (28) to the ECFIN methodology described above, t_i and t_c may be expressed and PITR (see above) and CITR (see below).

MM notes that the assumption by MRT that all income of self-employed individuals is capital in nature; in other words, labour income is earned solely by employed labourers. Should this assumption be applied in the case at hand, the tax wedge on employed labour would be calculated as:

$$\text{TWEL} = 1 - (1 - \text{NWEL})(1 - \text{PITR})(1 - \text{CITR}) \quad (29)$$

where NWEL is defined as part of equation (21) above.

4.4.5 Effective tax rates on capital income

As noted above, the ECFIN method of calculating tax revenues from capital income consists of determining the aggregate of personal income taxes on capital, corporate taxes and taxes on property and wealth. The calculation of the two latter components were discussed above, whilst the former is derived by multiplying the effective personal tax rate (calculated in the manner described above) by the capital income of households. According to MM, this capital income measure is calculated as the net operating surplus of the overall economy net of corporate taxes and property and wealth taxes.

MM reiterates the issue raised by CT, namely that an imputed wage for self-employed individuals should be removed from the tax base utilised in the AETR on capital income. The issue of the depreciation portion of net operating surplus is also raised – MRT argue that no capital taxes are levied on depreciation , and that the operating surplus should thus reflect the consumption of fixed capital. CT, however, argue that differing depreciation rates based on the useful lives of assets may skew AETR measures for the purpose of international comparisons.

ECFIN calculates four separate equations for the effective tax rate on capital income (KETG), each reflecting a different mix of the assumptions of MRT and CT relating to self-employed income and the choice of gross or net operating surplus. The first corresponds to both of the assumptions made by CT, as follows:

$$KETG = \frac{CORV + PWRV + Pitr * (NOSA - CORV - PWRV)}{GOSA} \quad (30)$$

where CORV and PWRV are corporate and property or wealth tax revenues, GOSA and NOSA are measures of the gross and net operating surplus of the overall economy excluding a measure of the imputed wages of self-employed individuals¹³. If MRTs'

¹³ As mentioned above, this is generally calculated as the difference between the labour effective tax base (LETB) and the total compensation of salaried employees (COEL).

assumption regarding depreciation is accepted, the denominator in (30) is replaced by NOSA¹⁴.

The third and fourth equations are developed using MRTs' assumption that all self-employed income is capital in nature, and does not consist of a labour component. Gross and net operating surplus (GOS and NOS respectively) would thus be the appropriate denominators (depending on the inclusion or exclusion of depreciation), and would not be reduced by the imputed wages of the self-employed as are GOSA and NOSA. The effective tax rate on capital (assuming that depreciation is excluded) would thus be calculated as follows:

$$KITG = \frac{CORV + PWRV + (NWRV - ELRV) + Pitr * (NOS - (NWRV - ELRV) - CORV - PWRV)}{GOS} \quad (31)$$

The term (NWRV – ELRV) in equation (31) refers to the ratio of total social security contributions to GDP, adjusted for the *pro rata* social security component of self-employed earnings. Where depreciation is included in the tax base, the denominator of equation (31) is replaced with NOS¹⁵.

4.5 Commentary and observations from other international sources

¹⁴ MM denotes this tax rate as KETN.

¹⁵ MM denotes this tax rate as KITN.

The United States Congressional Budget Office (CBO) comments on the difficulty in matching taxable income and National Accounting measures for the purposes of calculating the tax base denominators utilised in AETR ratios (CBO, 1997). The CBO lists a number of factors which differentiate these two measures, including taxable fringe benefits supplied by employers to employees¹⁶, receipts by not-for-profit or non-taxable entities¹⁷, business-level taxes and imputed rentals on owner-occupied housing (as noted in other studies).

Non-compliance by taxpayers is another factor that the CBO has identified as leading to disparities in taxable income versus national profit measures. Errors of omission or misstatement in tax returns (whether intentional or not) would lead to expected tax collections on National Accounting measures being greater than actual collections. CBO reports that, in 1994, actual tax collections reported by the Internal Revenue Service were approximately 82% of the amount expected from GDP and National Accounts analysis (ibid). 80% of this gap was attributed to non-compliance.

As regards the AETR on consumption discussed above, CBO posits that the most comprehensive measure of income for National Accounts purposes is GDP less depreciation and net payments to foreign countries, as this reflects the resources available for consumption in the economy. This would need to be adjusted for the nuances of a country's system of taxation, in order to provide a meaningful measure for the purpose of

¹⁶ These amounts would not be reflected in the income of households for National Account purposes, but are subject to taxation in most jurisdictions.

¹⁷ Profits of non-profit organisations or charities would be included in operating surplus and GDP measures, but would normally not be subject to taxation, or subject thereto at a preferential rate.

calculating AETRs. Net exports (export sales less foreign purchases) also require consideration for this purpose.

The CBO study also discusses the concept of tax shifting (also known as the incidence thereof). Although alluded to in the MRT and CT studies, both assumed that the incidences observed in the measures under consideration were the final incidences for tax purposes. CBO raises the possibility that this assumption is invalid – certain entities, such as partnerships, pension funds, trading trusts and collective investment schemes are treated as “flow-through” entities for tax purposes by many tax jurisdictions. Whilst the incidence of taxation is shifted to another entity (usually households), the income itself is reported in the sector in which the original entity resides. This may lead to situations where taxable income is reported in the corporate sector for National Accounting purposes, but taxation is paid in the household sector (or not at all, where the ultimate recipient of the flow-through income is tax-exempt). In practice, this mismatch of income and tax revenue is difficult to adjust for, due to a lack of data provided by Revenue authorities.

Ruggeri and Vincent (2000) note that the AETR methodology developed by MRT may provide results that are too aggregated for policy decision-making purposes. Where capital and labour factors receive tax benefits that are disproportionate to their share in national income, the assumptions made by MRT (refer above) would lead to biased results. As mentioned elsewhere, this bias arises from MRTs’ tendency to ignore jurisdiction-specific exemptions, deductions, credits and rebates for tax purposes. The

authors thus recommend that AETR studies include a calculation of the allocation of tax benefits, and a subsequent adjustment of the MRT methodology to incorporate this information¹⁸.

Notwithstanding the above, Ruggeri and Vincent (*ibid*) support the superiority of AETR measures against other methods of tax burden analysis, such as marginal effective tax rates. The latter, which calculate the extra tax burden from one extra unit of income, reflect a potentially unrealistic assumption that taxpayers can make decisions regarding production and consumption at marginal levels – for instance, that a taxpayer will cease to provide labour at the point where their income will result in higher taxes. The authors state that the backwards-looking, aggregated approach of AETR calculations tends to reflect the totality of all taxpayer decisions, and are thus a better measure of total tax burdens.

Immervoll (2000) reiterates the aggregation effect of the MRT methodology, and recommends a micro- or entity-level tax base analysis to increase the effectiveness of AETR measures. Immervoll also raises the timing differences arising from the different measures of taxable income and tax collections – the former, which is calculated using accounting methods, is usually prepared on an accrual basis, whilst the latter usually reflects the cash receipts of government. Measures of expected tax revenues based on accrual accounting would thus diverge from actual cash collections (refer also Jacobs and Spengler, 1999, in this regard).

¹⁸ This can be achieved by listing the tax benefits afforded by a specific jurisdiction, and assigning each benefit to labour, capital or consumption (refer Ruggeri and Vincent, 2000).

The OECD (2006) also raises the problem of timing differences in tax revenue approximation, as well as the incidence shifting identified by the CBO. The OECD also notes an issue with respect to certain items which are excluded from household and corporate tax bases, despite the taxability thereof in terms of country-specific tax legislation. Examples of such items are capital gains and mortgage interest.

Schmidt-Faber (2004) calculates an AETR for non-financial corporations in the EU (in other words, the implicit tax rate on capital), utilising an adjusted MRT methodology. The aforementioned study provides some insight into the definitions of capital for the purposes of AETR analysis, as well as a methodology for approximating the net income of taxpayers from capital property. Schmidt-Faber defines capital as physical capital, intangible assets, financial investments and savings. The author utilises a “net income” approach for the calculation of income from capital properties, viz. receipts less payments for each category. This approach is realistic for corporate entities, which would usually be entitled to deduct capital payments (such as interest, rent and royalties) for tax purposes; households, however, may not be entitled to such deductions (specifically with respect to mortgage payments and interest on consumer loans). This approach would thus have to be evaluated in line with the specific taxing legislation of the jurisdiction under review.

Schmidt-Faber (ibid) also identifies another disparity between tax revenues and approximated tax bases. In some countries, including South Africa, corporate tax

payments for a specific taxation year are prepaid based on an estimated taxable income (usually based on the previous year's measure thereof). These "prepayments" of taxation may not reflect the actual performance of a company, and usually involve a "top-up" payment or refund in a subsequent year. Corporate tax revenues which consist of such payments may thus not be comparable to the actual economic performance of corporations for the period in question. Some AETR studies have thus employed accrual-basis measures of tax revenues, to match the basis of corporate tax payments to company performance¹⁹ - this approach is generally recognised to provide less volatile measures than those produced where cash-basis tax collection data are utilised. This is clearly only possible where such data is provided by revenue authorities, or where the data may be reliably approximated.

The financial data underlying National Accounting measures can also affect the determination of synthesised tax bases. Luh (1999) notes that most EU member states compile national profits data using measures of production and factor input. Schmidt-Faber (2004) suggests that direct measures of profits, using actual accounting data from companies, may provide a better approximation of corporate tax bases for this purpose. The latter method may involve a number of conceptual differences in comparison to National Accounting; for instance, company accounts recognise depreciation of fixed assets, whilst National Accounts records the consumption of fixed capital. Although depreciation is a measure of fixed capital consumption, the latter may (to a certain extent) be reinvested by the consumer, and lead to the generation of income in future periods.

¹⁹ Refer *inter alia* Devereux and Klemm (2003).

The use of company accounting data may therefore lead to underestimations of potential tax bases over time.

Marcet (1998) comments on the aggregation problem with AETRs estimated from macroeconomic data, remarking that this “simplification” is most prevalent where a country’s tax code is progressive. Notwithstanding this problem, Marcet supports MRTs’ conclusion that AETR measures are at least as effective as other methods (such as marginal effective tax ratios) for the purposes of tax burden analysis and international comparison.

OECD (2000) sets out three potentially significant mismatches between the numerator and denominator of AETR measures relating to corporate tax burdens. The first, dealing with corporate and quasi-corporate income which is recorded as such but taxed in the hands of households (or not at all), has been discussed above. The second potential problem deals with the “closed economy” nature of National Accounting data. Where tax is imposed on the worldwide income of taxpayers, the revenue collected from this portion of income is included in the data utilised for the numerator of certain AETR equations. The foreign income, however, is not included in the denominators of such equations, as they comprise the results of domestic companies only. Lastly, the national results utilised in the tax base approximations may include companies with negative results for the period (i.e. loss-making entities). As no tax refunds are payable in respect of company making losses, the AETR would tend to be understated²⁰.

²⁰ These losses would be set off against future taxable income, leading to a decrease in taxes payable. The current period would, however, still be misstated.

Notwithstanding the above, the OECD (ibid) generally concludes that backwards-looking AETR measures are the best indicators of corporate tax burdens relative to other methodologies, provided that adjustments are made for differences between national accounting practices and the requirements of the relevant tax legislation.

The Foreign Investment Advisory Service (2006) discusses the advantages of AETR measures relative to METRs. Whilst the latter are more useful for investment decision-making purposes, AETRs are seen as superior for the purposes of tax burden analysis, and as an indicator of the distribution of tax burdens across economic sectors.

Indahl *et al* (2006) stress the importance of the AETR in labour decision-making, as well as for economic studies concerning labour supply. As noted above, the theory underlying the AETR methodology states that tax revenues are the differences between pre- and post-tax labour costs – in other words, the AETR measures the proportion of labour income that will not flow to the economic agent providing the labour.

Keuschnigg (2005) states that AETR measures are critically important for foreign direct investment decisions. This importance hinges on the fact that AETR measures reflect the totality of a country's tax system, and thus provide more information to potential investors than statutory rate information or METR measures. As alluded to above, METRs are based on the (sometimes unrealistic) assumption that firms will cease to invest at the point where the marginal tax rate is too high. This ignores the fact that many

investment decisions are “all or nothing”, and may be subject to external factors such as exchange controls.

Wolff (2005) utilises the MRT methodology for 25 EU countries, and comments on the results of his calculations relative to other similar studies. He concludes that AETR measures calculated using the MRT method are “...*well suited for macroeconomic models and cross-country comparisons*”. This conclusion is based on the fact that AETR measures utilise logical and consistent National Accounts data, and take into account all exemptions, deductions, credits and rebates afforded by the relevant system of taxation.

Beaulieu *et al* (2004) raise another caveat when dealing with times series data for historical AETRs. As noted above, AETR measures provide an aggregation of all tax provisions, including those that may no longer exist. Examples of this would be new taxes, or new treatments for specific types of income. Where researchers are attempting to present a standardised measure of tax burdens over time, these inconsistencies in tax policy may require adjustments in order for time series data to be comparative. Conversely, the measures also provide a realistic indication of tax burdens over time, allowing for comparisons between past and present incarnations of a country’s tax system.

Valenduc (2004) reiterates the inability of formalised AETR methodologies to account for the effect of tax avoidance or planning by taxpayers. Apart from the effect of such an omission on the components of the AETR equations, this inability also negates the

effectiveness of AETRs as a measure of the effectiveness of a country's anti-avoidance legislation (although the methodology would generally not be used for this purpose). Valenduc also cites the difficulty in including the effects of specific tax rulings by revenue authorities in AETR analysis. Such rulings, which may apply to specific companies or industries, may comprise a significant element of tax policy.

The effect of tax planning on AETR measures is also considered by Hajkova *et al* (2006), specifically in the context of international tax planning by companies. Despite transfer pricing and thin capitalisation legislation, corporations are able to legally rearrange their operations in order to exploit global tax arbitrage opportunities. Where tax burdens are low or nil in the foreign countries in which companies operate and foreign incomes are imputed to the domestic company for tax purposes, the result is a mismatch between tax revenues collected by authorities and the corporate profits recorded in the domestic National Accounts. In some cases, this effect is mitigated by domestic tax credits for foreign taxes paid, or via the application of tax treaties between the countries concerned.

4.6 Conclusions – international research

It is generally clear from international experience that AETR measures provide an effective means of calculating the tax burden applicable to different types of factor income. The effectiveness of these measures is greatly increased where adjustments can be made for those specific tax provisions that lead to differences between the National Accounts basis of tax base calculation and the actual taxable income of various taxpayers. Consideration must also be given to time-based matching problems between tax and

income data, which arise from differences in the cash and accrual methods utilised in the calculation thereof.

The methodology originally formulated by MRT, when revised in the manner described by other researchers and as required for a specific country, provide an excellent method of deriving synthetic tax bases for the country in question. For most purposes, this methodology is described as superior to other methods employed for certain types of taxation analysis, such as METRs and tax to GDP ratios. This superiority is partly due to the availability of data for the purpose of calculating AETRs.

In cases where the AETR methodology is employed, international research has demonstrated that certain assumptions are unavoidable, particularly where tax data is scarce or aggregated. The impact of such on the effectiveness of the AETR measures is dependent on the intended use thereof. Many of the drawbacks identified above are applicable only when multi-country comparisons are attempted, and standardised, comparable measures are required.

In cases where one country is studied, no standardisation is required, and the AETR methodology employed may be specifically tailored to the nuances of that country's tax and National Accounting systems. This enables the successful synthesis of tax base measures for the labour, capital and consumption factors, and the matching of tax revenues to those bases. As data becomes less aggregated, specific measures may also be made for different industry sectors or classes of taxpayers.

5 AETR methodology in the South African context

5.1 Relevant provisions of the South African Income Tax Act

As evidenced from the international research presented in the preceding section, the ability of AETR measures to estimate the tax burdens applicable to the factors in question is enhanced by the similarity between the tax base measures utilised in the denominators of the equations, and the taxable income applicable to those factors. Where possible, the tax base measures should be adjusted to reflect the appropriate tax treatment of the items included therein. Although this practice would decrease the international comparability of the AETRs calculated, such a comparison is not the main focus of this study.

I outline below the relevant sections of South African tax legislation that are expected to affect the tax base measures utilised in the domestic AETR analysis. The following is not intended to provide an exhaustive review of South African tax legislation, but rather to identify potential misstatements that may occur when using National Accounting data to approximate tax bases. Where possible, I outline the required adjustments and assumptions necessary to calculate realistic and representative measures of the overall South African tax bases under consideration.

5.1.1 Calculation of the South African tax liability

The starting point in calculating the taxable income of South African taxpayers is the definition of “gross income” in the Act. Briefly, gross income includes all amounts received or accrued (defined by case law as all amounts to which taxpayers are

unconditionally entitled), in cash or otherwise, not of a “capital” nature. Briefly, receipts or accruals of a capital nature are understood to be amounts relating to the sale of investment (rather than speculative) assets, or amounts which relate to the income earning structure of a business rather than its operation.

Taxpayers must then deduct exempt income (as prescribed by the Act), resulting in an amount defined as “income”. The Act may also deem certain amounts to be included in a taxpayer’s income. Further deductions and allowances prescribed by the Act are then deducted, resulting in the aforementioned “taxable income” amount. Capital gains or losses on the disposal of capital assets are added to taxable income subject to prescribed inclusion rates applicable to the different classes of taxpayers.

Depending on the nature of the taxpayer, specific tax rates are applied to the taxable income amount, and a tax liability is calculated. Taxpayers are required to remit the amount of such liability, net of certain rebates and credits (for example, a prescribed amount of foreign taxes paid) to the SARS.

The structure of the system of taxation described above is such that specific types of income are generally not taxed at preferential rates (with certain exceptions – see below). All non-exempt amounts, whether investment income, remuneration or business profits are included in taxable income, and are thus taxed at the rate applicable to the taxpayer in question. MRTs’ assumption that capital income (other than capital gains) are taxed at the same rate as other income is thus valid in the South African context, and is applied for the

purposes of domestic AETR calculations. CTs' adjustments in this regard (refer above) are therefore not necessary for the purposes of this study.

5.1.2 Specific tax treatment of capital income

The provisions governing the taxation and deductibility of interest are contained in section 24J of the Act. The definition of "interest" for the purposes of the section is purposefully wide, and includes, *inter alia*, all finance charges, discounts and premiums relating to financial arrangements, and compensatory payments relating to lending arrangements. Section 24J prescribes a calculation method with respect to interest amounts based on the yield-to-maturity of the interest-bearing instrument in question, effectively calculating the taxable or deductible portion of interest receipts and payments on an accrual basis. The tax treatment of interest amounts would thus correspond to the accounting treatment thereof – any measures (such as National Accounting data) prepared on an accrual basis would not require adjustment for the purpose of inclusion in tax base measures for AETR calculations. I therefore make no adjustments in this regard for the purposes of approximating South African tax bases.

The taxability of rent and royalty payments to South African residents are not specifically provided for in the Act – these amounts would be included in taxable income via the initial inclusion in gross income, as discussed above. I reiterate that these amounts would not receive preferential tax treatment in comparison to other types of income – no adjustments are thus necessary in respect of such amounts for the purposes of tax base approximations.

Notwithstanding the above, the provisions of section 35 of the Act require consideration. Briefly, the aforementioned section requires a twelve percent withholding tax to be paid by certain non-residents whom receive royalty payments relating to the use of specified intangible assets (subject to certain limitations). In practice, this section may give rise to situations where tax revenue is recognised by the South African government in respect of income that is not accounted for in the domestic National Accounts. This would generally lead to an overstatement in the South African AETR on capital. Due to a lack of data in this regard, it is difficult to propose an adjustment to the tax revenue amount utilised in the AETR calculation.

It is noted that SARS has recently challenged the deductibility of royalty payments made to non-residents on the basis that these amounts are capital in nature. Should this view be generally adopted, the royalty payments would not be tax deductible in the hands of the South African payer, leading to an increase in tax liabilities. Where such payments are incurred by corporate entities, the tax base applicable to capital income utilised in future AETR calculations for South Africa would include these amounts, eliminating potential overstatements.

5.1.3 Exempt dividend income and STC

Although the Act lists a number of exemptions from income for tax purposes, the most relevant to the study at hand is the local dividend exemption provided for in section 10(1)(k) thereof. Subject to certain exclusions, distributions paid by a South African company to its shareholders are exempt from tax in the hands of the latter. Such distributions are subject to STC (effectively a withholding tax) at a rate of 12,5% per

cent. The liability for STC rests with the company that pays the distribution. The tax treatment of local dividends in the hands of recipient taxpayers, as well as the imposition of STC on the paying companies clearly require consideration for the purposes of South African AETR calculations.

For the purposes of the domestic calculations, the measurements of household property income and unincorporated enterprises (equation (5) above) are adjusted for dividends received by these classes of taxpayer. As STC is payable by companies on the net amount of dividends paid (in other words, dividends paid reduced by dividends received, subject to certain exclusions), the adjustment required to equation (7) is more complex. The numerator thereof is adjusted for the amount of STC paid in the given period, as this is inherently a tax on capital income. However, should the corporate income utilised in the denominator be reduced by dividends received, the reduction in corporate income tax would offset the liability for STC so included, resulting in an understatement of the capital tax base and thus the AETR calculation for capital income.

I therefore propose to retain the net operating surplus of the overall economy as the unadjusted tax base measure in equation (7). The overall AETR calculated thus represents the effective tax rate applicable to capital income in South Africa, effectively assuming that the STC is a tax borne by households via a decreased return from equity shareholdings. The measure of capital income received by households, however, should be reduced by dividends received.

5.1.4 Capital gains and losses

The South African tax legislation, like many jurisdictions included in the international research referenced above, provides for preferential tax treatment in respect of capital gains or losses. Such gains and losses are calculated in accordance with the provisions of the Eighth Schedule to the Act, with the taxable capital gain included in taxable income by virtue of section 26A of the Act.

Briefly, capital gains or losses arise on the “disposal” (widely defined in the Act to include most conceivable means of disposition) of an “asset” (defined to include all forms of property, corporeal or incorporeal, including an interest in or right to such). Taxpayers are required to calculate CGT “base costs” for assets, utilising a number of provisions of the Eighth Schedule – this amount is then deducted from the proceeds of disposition, leading to a capital gain or loss. The net amount of gains and losses is then included in taxable income in the manner described above.

The net capital gain discussed above is subject to a specified inclusion rate in taxable income, dependent on the nature of the taxpayer. At the time of this study, the inclusion rates are 50 percent for companies and trusts, and 25% for individuals and special trusts²¹.

²¹ Special trusts are those created solely for the benefit of persons with specified disabilities, or testamentary trusts established solely for the benefit of minor children.

As noted above, the National Accounting measures utilised in the AETR equations would not include capital gains, as such gains do not constitute value added. An adjustment in respect of the taxable portion of capital gains is therefore required.

In practice, the adjustment for the untaxed portion of capital gains is extremely difficult to quantify. Capital gains data are not specifically disclosed by SARS or the South African National Treasury, and are almost impossible to estimate given the complex rules governing the calculation of asset base costs and proceeds from disposal. It is therefore necessary to consider the quantum of the misstatement that would arise from the omission of capital gains from the AETR tax base measures.

The first point of discussion relates to corporate entities. Although capital gains *per se* are not included in National Accounts data, profits from the sale of assets are (as these would generally form part of net income for accounting purposes). Capital gains would generally not be made in respect of fully depreciated assets, unless the proceeds on such sales were greater than the original cost thereof (the profit made up to the original cost is considered a recoupment of depreciation allowances for tax purposes, and is thus taxable in full). The accounting profit, however, would be the difference between proceeds received and net book value.

I assume that tax and accounting depreciation are equivalent (refer below for more detail), and thus equate accounting profits (up to cost) on the sale of assets with the fully taxable recoupment amount included in taxable income. The “capital gain portion” of

disposals is thus limited to the difference between the historical cost of assets for accounting purposes, and the proceeds derived from the sale. The potential misstatement (for AETR purposes) in respect of depreciable assets is thus greatly reduced.

It is noted that the discussion above addresses depreciable business assets only. Should companies dispose of non-depreciable investment assets, intangible assets or business operations, an adjustment would be required for a full 50 per cent of the profit thereon, on the assumption that the profit is included in the net profit of the companies in question for accounting purposes (and thus included in the National Accounts data for AETR purposes).

Sections 41 to 47 of the Act contain certain provisions colloquially referred to as the “corporate rules”. These provisions allow taxpayers to transfer specified assets to other parties (usually members of the same group of companies) without triggering income tax or CGT consequences at the time of the transaction. The transactions considered by the aforementioned sections include company formations, investment-for-equity share transfers, amalgamations, unbundlings, intra-group transfers and liquidations.

For the purposes of domestic AETR calculations, I assume that corporate taxpayers would, wherever possible, avail themselves of the relief provided by the abovementioned provisions. CGT would thus only arise where the rules could not specifically be applied, or where deemed disposition considered in the rules are triggered. Although this assumption does not eliminate the need for an adjustment in respect of capital gains, it

limits the necessity for this adjustment to those corporate capital transactions falling outside the scope of the corporate rules.

The capital transactions of households also require consideration, although a different set of assumptions is required. These assumptions stem from specific provisions of the Act that I consider relevant to household transactions. Firstly, sales of “personal-use assets” (or those assets not utilised for trade) are not subject to CGT. Household asset sales would thus only require consideration where the assets in questions constitute investments, or where they are the assets of unincorporated enterprises. I consider the latter to be insignificant in relation to the total measures utilised in the tax base approximations, and thus make no adjustment in this regard.

Another provision of the Act requiring consideration is the R1,5 million exemption²² from CGT available to natural persons in respect of sales of property comprising a taxpayer’s primary residence. Although domestic property prices have risen sharply over the past five years, the aforementioned exemption would limit the misstatement arising from capital gains on primary residence properties.

Lastly, given the structure of the financial services industry in South Africa, it is not unreasonable to assume that a significant number of household investments that would give rise to taxable disposals are held through unit trusts, endowment policies or similar investments. Direct investment by South Africans is largely attributable to sharedealers;

²² This is the exemption presently legislated at the time of this study.

these individuals would be subject to tax at the full, non-preferential rate, as the assets in question would be speculative in nature.

The mechanics of the taxation system as it relates to unit trusts, insurers and other investment entities is considered below. Upon review of these mechanics, it is clear that the income attributable to households in respect of investments would include capital gains, whereas the tax payments relating to this income would include only the taxable portion. Permanent differences giving rise to mismatches between the potential and actual tax collections could therefore be expected to arise.

Despite the discussion above, it is clear that the lack of data in respect of capital gains precludes a perfect approximation of the overall tax bases relating to South African factor income. However, misstatement in this regard may be limited due to the factors so discussed.

Lastly, the taxation of capital gains in the hands of non-residents requires consideration. The Act provides for the taxation of capital gains arising from the sale by non-residents of immovable property in South Africa²³, or capital gains arising in the South African PE²⁴ of a non-resident. In both cases, the tax relating to the capital gains would be included in the revenue measures utilised in the AETR calculations, and the income

²³ In practice, the payment of capital gains tax by non-resident individuals was easily avoidable, and gave rise to mismatches in the tax revenue and taxable income measures. However, recently introduced legislation has imposed a compulsory withholding tax payable by the purchaser of immovable property from a non-resident. In specified circumstances, the liability for a portion of this tax may even be shifted to the estate agent facilitating the sale. This is expected to greatly reduce the avoidance of capital gains tax by non-residents.

²⁴ As defined in Article 5 of the OECD Model Convention.

would be included in the tax base measures. Once again, however, it is not possible to adjust for the non-taxable portion of the capital gains.

5.1.5 Remuneration and similar income

South African employees' tax is governed by a pay-as-you-earn (PAYE) system, whereby amounts are withheld by employers from amounts paid to employees. The terms "employer" and "employee" are defined in the Fourth Schedule to the Act – these definitions, and hence the employee-employer relationship, hinge on the definition of "remuneration" in the aforementioned schedule. Remuneration, which is extremely widely defined, includes almost all forms of payments with certain specific exclusions. Where remuneration is paid, the two parties involved are automatically an employer and an employee by definition, and employees' tax is required to be withheld and paid over to SARS.

Based on the wide definition of "remuneration" for tax purposes, it is safe to assume that all amounts that are subject to employees' tax would give rise to such, thus matching the tax base used in the AETR for labour to the tax collections in respect thereof²⁵. Where individuals have been compensated as independent contractors (one of the aforementioned exclusions to remuneration), this income would form part of either the unincorporated or incorporated income utilised in equations (5) and (7). I therefore conclude that no adjustment is required in this regard.

²⁵ It is noted that the employees' tax withheld is calculated based on certain tables provided by SARS. Where the tax collected is less or more than the true tax liability based on the final return of the employee, additional tax would be remitted or a refund would be claimed. This should thus not give rise to matching problems in the period that the tax is withheld.

The point noted by the CBO (1997) concerning matching problems in respect of employment benefits requires consideration, due to its relevance in the domestic context. The Seventh Schedule to the Act calculates the taxable portion of fringe benefits granted to employees, including such items as free or cheap services, loans with preferential interest rates, and vehicle allowances. These benefits give rise to taxable inclusions in the gross income of South African taxpayers, but may not be matched by income amounts for the purposes of tax base approximation. This is potentially an area which would lead to an overstatement in the AETR on labour for South Africa – however, the lack of data in this regard precludes the calculation of an appropriate adjustment.

5.1.6 Social security contributions

As noted above, the internationally-developed AETR methodologies provide for certain inclusions, in both tax revenue and tax base measures, for social security contributions by taxpayers and employers. The rationale for the specific inclusion of these contributions is that they are, essentially, tax payments in nature – they consist of contributions to the government that generate social expenditure in the future.

Notwithstanding the above, social security payments are not considered relevant to the tax base measures in the South African context. Most social insurance schemes (such as pension and medical funds) are privately funded, and thus would not constitute payments which are “tax-like” in nature. Government pensions and benefits are generally exempt from income tax in terms of section 10 of the Act, and are thus excluded from the AETR analysis. However, certain social security payments are made to the government in respect of the provision of certain social services. I calculate an additional AETR

measure applicable to labour that includes social security payments by employees in the numerator of the equation. This also serves to provide an international comparable measure, should such a measure be the focus of future research.

I assume that employer contributions to social insurance funds are generally made on a cost-to-company basis – in other words, excluded from remuneration for tax purposes thus not subject to employees' tax.

In terms of the Act, where employer medical contributions exceed a prescribed limit (in the past, two thirds of total contributions, now a flat amount) the excess is considered a taxable fringe benefit in the hands of the employee. Due to a lack of data in this regard, I assume that these amounts are not generally significant for employees' tax purposes, and do not require adjustment for the purposes of tax base approximation.

Pension contributions paid by individuals are deductible for tax purposes subject to certain limits²⁶, whilst contributions to provident funds are not deductible at all. It would be possible to estimate an upper limit for the deductions available to South African taxpayers in this regard, based on the aforementioned limits. However, this would generally tend to understate the tax base applicable to households, and thus overstate the AETR for households and labour. Furthermore, as these amounts are paid out of after-tax remuneration, they are relevant to the AETR on households only, and not to the AETR on labour. I therefore ignore these deductions for the purposes of tax base approximation.

²⁶ As of the date of this study, pension fund contributions are deductible subject to a limit of the greater of R1 750 or 7,5 per cent of the annual remuneration derived by a taxpayer in respect of their retirement-funding employment.

CT discuss the adjustments necessary to recognise the exempt status of amounts received from insurance policies and benefit funds (refer above). Although lumpsums received from pension and provident funds are subject to preferential tax treatment in terms of the Act, it is assumed prudent to ignore any adjustment in this regard due to the lack of adjustment in respect of the deductibility of contributions. This treatment effectively assumes that all pension and provident contributions are non-deductible, and that lumpsum receipts from these funds are non-taxable.

5.1.7 Receipts from long-term insurance policies

CTs' comments on household receipts from long-term insurance policies are relevant in the South African context. Contributions made by households in respect of such policies would generally not be deductible for income tax purposes; conversely, the payout of such policies would generally be considered capital in nature and would thus be excluded from taxable income. South Africa therefore follows the taxable-exempt-exempt (TEE) approach noted by CT. In contrast, where insurance payments are deductible (as with short-term policies purchased by corporations), the insurance payout would be taxable; this would thus be the exempt-exempt-taxable (EET) approach.

Rather than follow the approach suggested by CT (i.e. to estimate returns on long-term insurance assets and compound them over time), it is possible to obtain the amount of claims paid by South African long-term insurers for a given period. Notwithstanding this, it is difficult to allocate the claim income between corporations and households. It is therefore necessary to assume that all claims paid by long-term insurers are allocated to

households. I consider this a reasonable assumption, given that corporate entities are less likely to purchase this type of long-term insurance for investment purposes.

The tax base measure calculated in respect of households for the purposes of AETR analysis should therefore be decreased by the amount of long-term insurance income received, on the assumption that such amounts are generally capital in nature and thus not subject to income tax.

5.1.8 Business profits

The taxable income of corporations (including close corporations) is subject to a flat rate of tax, currently 29%. Local branches of foreign corporations are also subject to a flat tax rate, albeit a higher rate of 34%. As discussed above, distributions of after-tax profits give rise to STC at a rate of 12,5%, resulting in an effective tax rate similar to the highest rate imposed on individuals. There is currently no undistributed profits tax in South Africa.

Except where otherwise noted in this section, it is assumed that the operating surplus figure utilised in the AETR calculations, which includes the pre-taxation results of South African corporate entities, does not require significant adjustment in order to reflect the taxable income thereof (with the exception of local dividend income).

5.1.9 Deduction of expenditure for tax purposes

Expenditure incurred by South African taxpayers is generally deductible for tax purposes where it is incurred in the production of income (as defined in the Act), and is not capital

in nature. Capital expenditure has been established by South African tax case law to mean, *inter alia*, amounts incurred which provide an enduring advantage or benefit, or relate to the structure or assets of a business rather than the operations or profits thereof. The Act also contains a number of sections providing for the deduction of specific types of expenditure (including legal fees, repairs and maintenance, wear and tear, lease expenses and so on). The specific sections are often intended to address certain items which would not normally meet the criteria for general deduction.

Section 23(m) of the Act precludes salaried employees from deducting all but a very short list of expenses for tax purposes. I thus assume that no adjustment in respect of deductible expenditure is necessary for the purposes of the AETR on labour income.

I also assume that the significant portion of expenses incurred by corporations and unincorporated enterprises would be deductible for tax purposes, either by virtue of the general deduction provision or in terms of specific sections of the Act. The main exception to this would be expenditure of a capital nature which is not deductible in terms of specific sections. A good example of such expenses are professional or legal fees, which may relate to the capital structure of the business rather than its ongoing operations.

Where such expenses are not capitalised as or to specific assets (which would lead to a capital gain or loss on disposal), they would constitute permanent differences between accounting data and taxable income. This would tend to understate the denominator of

the relevant AETR equation, and thus overstate the effective tax rate. However, due to the lack of specific data in this regard, no adjustment is possible for the purposes of domestic calculations.

5.1.10 Inventories

The treatment of inventories for South African tax purposes is almost identical to the treatment adopted for most National Accounting measures. Purchases are generally deductible, whilst the net movement in inventory (i.e. opening less closing stock) is included in or deducted from taxable income. Inventories are valued for tax purposes utilising the method prescribed by South African Generally Accepted Accounting Practice. For tax purposes, trading stock includes certain types of work-in-progress.

There are certain tax provisions which would lead to differences from accounting practice – examples of these would be donations, distributions *in specie* or sales made at values that are less than the fair value of the stock. I assume that these provisions are not generally applicable, and that the tax treatment of inventories is commensurate with the treatment thereof for National Accounting purposes. No adjustment is therefore required for the purposes of AETR calculations.

5.1.11 Profits of unincorporated enterprises

In terms of South African tax law, individuals operating as unincorporated enterprises (or sole proprietors) would recognise business profits as a component of personal taxable income (i.e. no separate tax return would be filed, and the profits would be taxed at the

individuals effective tax rate). Unlike the international income measures, no separate measure for these profits is thus necessary in the AETR equations.

5.1.12 Tax treatment of losses

CT and the OECD raised the issue of operational losses incurred by enterprises, and their effect on the accuracy of AETR measures. Business losses would artificially decrease tax base calculations and artificially decrease an AETR measure – this occurs because their inclusion in tax base measures implies that tax refunds would be granted to taxpayers based on losses.

This issue is equally relevant in the South African context – the Act does not make provision for tax refunds on business losses, but rather that they be carried forward for setoff against taxable income in future periods. This would give rise to timing differences in annual AETR measures, as tax base measures would be overstated relative to taxable income in years when losses are incurred, and understated in the period during which the losses are utilised.

The extent of the misstatement in AETR measures due to timing differences arising from tax losses is not easily quantified, due to the inherent difficulty in predicting the timing of tax loss utilisation.

The provisions of the Act provide for the “ring-fencing” of trade-related losses incurred by unincorporated enterprises; in other words, losses from one trade (for example, a

rental enterprise) may not be set off against employment income earned by the same taxpayer. This would serve to limit the misstatement of household or labour AETR measures due to losses incurred by individuals, although only to a certain extent.

It is noted, however, that the misstatement resulting from business losses would not apply to individuals or unincorporated enterprises – where overpayments are made, refunds are issued by SARS and are thus included in the tax revenue measures utilised in the AETR calculations. This results in better matching for the purposes of calculating AETRs on household and labour income.

5.1.13 Foreign income

South African residents are taxed on their worldwide income. Any foreign receipts, such as interest or dividends, would thus be included in the tax bases for household and capital income. This income is generally assumed to be included in the National Accounting measures utilised in my tax base approximation, and no adjustment in this regard should be necessary. The Act also provides for a rebate against South African taxes payable for any foreign taxes paid on the aforementioned foreign income (limited to the total South African tax liability), thus eliminating any double-counting of foreign receipts in the tax base measures.

The Act provides for a minimal exemption in respect of foreign interest and foreign dividends received by individual taxpayers – for the purposes of domestic AETR calculations, this exemption is treated as immaterial, and no adjustment is deemed necessary.

The definition of “gross income” in section 1 of the Act includes the receipts and accruals of non-residents, to the extent that they are derived from a South African source (or a deemed South African source due to some other provision of the Act)²⁷. This income would not, however, be included in domestic National Accounting measures – this would tend to understate tax bases relative to tax receipts, leading to an overstatement in AETR measures.

5.1.14 Foreign exchange gains

The tax treatment of foreign exchange gains and losses is provided for in section 24I of the Act. Despite the complex nature of the legislation, which includes certain exemptions and prescribed treatments in respect of certain items (such as foreign exchange gains or losses arising from transactions between associated companies), the tax treatment of such gains and losses is generally similar to the accounting treatment thereof. I therefore assume that no adjustment is necessary in this regard.

5.1.15 Controlled foreign entities

As noted during the discussion of the international AETR research, the “closed economy” nature of the AETR methodology (which utilises domestic results only) would give rise to misstatements where the prevailing tax legislation requires an attribution in respect of foreign group companies. South Africa is no exception with respect to such legislation – the provisions of section 9D of the Act require South African taxpayers to attribute a

²⁷ As noted elsewhere, interest earned by non-residents is generally exempt from tax.

specified portion of the net income of a “controlled foreign company”²⁸ (or CFC) to their taxable income. The aforementioned net income is calculated as if the CFC were a South African resident (i.e. in terms of the provisions of the Act).

Once again, a lack of data in this regard makes any adjustment for the abovementioned misstatement extremely difficult to quantify. However, it is noted that section 10 of the Act exempts from tax any foreign dividends received by residents to the extent that income from which the dividend is distributed was already subject to tax by virtue of, *inter alia*, section 9D. On the assumption that all attributable income is distributed by the foreign company in question, the amount of such income subject to tax in the hands of South African taxpayers could therefore be approximated by foreign dividends received. The inclusion of such dividends in the tax base measures for AETR purposes would thus mitigate the misstating effect of excluding foreign company results from the tax base measures.

5.1.16 Donations tax and estate duty

South African tax legislation levies a tax (currently at a rate of 20 per cent) on certain gratuitous disposals of property (or donations) by taxpayers. There are also specific provisions of the Act that deem certain distributions to be donations for this purpose. Furthermore, an estate duty is levied on the amount of a taxpayer’s taxable estate (calculated in the manner prescribed by the EDA) upon their death.

²⁸ A CFC is defined in section 9D as any non-resident company where more than 50 per cent of the total participation and/or voting rights in that foreign company are held by one or more South African residents, whether directly or indirectly. Where a person holds less than five per cent of the participation rights of certain specified types of foreign companies, they are excluded for the purposes of this definition (provided that they are not related parties in relation to the other shareholders).

In a similar fashion to capital gains, the donations tax and estate duty rules would lead to mismatch between tax revenue figures and tax bases calculated using National Accounts data. This is due to the fact that no value is added by donations or inheritances. However, the effect of this mismatch (an overstatement in the AETR on households) is a true reflection of the mechanics of the South African tax system, as a tax is levied on a transactions that adds no capital value to the economy. The tax collections from donations tax and estate duty are thus included in the tax revenue amount utilised in the calculation of the aforementioned AETR measure.

5.1.17 Depreciation and capital allowances

Certain sections of the Act provide for depreciation allowances in respect of assets utilised for the purposes of trade or in manufacturing processes. In certain cases, the tax allowances granted may differ from the depreciation amounts recorded by taxpayers for accounting purposes – this would lead to timing differences between accounting profits and taxable income.

Notwithstanding the above, I assume that capital allowances claimed for tax purposes are equal to accounting depreciation. This obviates the need for any adjustment in the AETR calculations. Furthermore, this assumes that depreciation is allowable in full for tax purposes, justifying the use of net, rather than gross operating surplus measures in the calculation of the AETR applicable to capital income.

5.1.18 Long-term insurers

For tax purposes, long-term insurers (and re-insurers) are required to separate their assets and policy liabilities into four funds - three of the funds (the UPF, IPF and CPF), are attributed to untaxed, individual and corporate policyholders respectively, based on the underlying policy ownership, and the fourth (the CF) to corporate shareholders of the insurance company. At the end of the tax year, the IPF and CPF are required to transfer so much of the funds' assets that exceed the associated liabilities to the CF, or vice versa where a policyholder fund is insolvent. Each fund is considered a separate taxpayer, with a different applicable tax rate (the IPF, CPF and CF are taxed at 30, 29 and 29 per cent respectively).

For AETR purposes, the tax base approximations would include the full income of long-term insurers, including amounts attributable to policyholders. Tax revenues would include all tax collections from these entities, including those funded by policyholders²⁹. This would appear to understate the AETR on households, and overstate the AETR on capital income, as household tax liabilities are settled by corporate entities – however, this would only occur where amounts are actually received by households. Where income or capital gains are reinvested, or will only be distributed in the future, the misstatement would not occur – the amounts would most likely be capital in the hands of policyholders, and thus not subject to tax.

²⁹ This is due to the insurer acting as an agent in respect of policyholder liabilities – amounts are withheld from policyholders and transferred to SARS (known as the “trustee tax” basis).

5.1.19 Flow-through and quasi-corporate entities

The CBO raises the issue of matching problems between AETR numerators and denominators arising from tax shifting (I reiterate that the original MRT methodology assumes that all tax revenue measures reflect no tax incidence – in other words, the first incidence of a tax liability is the final incidence thereof). For income tax purposes, such shifting is most likely to occur in “quasi-corporate” entities that reflect operating results for National Accounting purposes, but “flow-through” the income for tax purposes. In the South African context, there are generally two types of entities that may give rise to significant instances of this phenomenon, namely collective investment schemes (CISs) and partnerships.

Briefly, a CIS is a financial investment scheme where participatory interests are offered to and held by members of the general public – examples of these would be unit trusts, mutual funds and real estate investment schemes. The Act makes mention of two types of CIS – CISs in securities (CISS) and CISs in property (CISP); these categorisations are dependent on the definitions contained in the CISCA, which are based in turn on the underlying investments of the entities in question. The former is defined as a company for tax purposes, and thus subject to corporate tax, whilst the latter is considered a trust.

In practice, a CISS would function in much the same manner as long-term insurers. Tax payable on operations would be imputed to unitholders, and may be withheld from the investment returns payable to them. This would give rise to the situation discussed above, whereby individual tax payable is paid by corporate entities. Notwithstanding this, the

methodology of AETR calculation may mitigate any matching problems. Investment returns on CISS investment would comprise capital income, and would thus be taken into account for the purposes of the AETR on that factor. The tax in respect of this income would either be paid as part of corporate income tax (included in the numerator in full), or as personal income tax (which is included as a prorated measure, based on the AETR applicable to households). The matching problem only arises where tax is paid by the CISS, but income is distributed to unitholders in the same year.

In contrast, CISP investments are subject to a specific deduction in terms of section 11(s) of the Act. The aforementioned section grants a tax deduction to the CISP in respect of amounts distributed to unitholders³⁰. Furthermore, the dividends received by the unitholders are not subject to the dividend exemption granted by section 10 – the liability for tax thus rests with the taxpayers receiving the income. It may therefore be concluded that no matching problems would arise for CISP-type investment funds.

Partnerships are not considered legal entities for South African tax purposes - section 24H of the Act contains various provisions that shift the taxable income and capital gains of partnerships (including the various applicable deductions and allowances) to the partners in their individual capacities (subject to certain limitations). There is thus immediate shifting of the tax liability, giving rise to potential mismatches in the AETR measures. Once again, a lack of data in this regard precludes the possibility of adjusting for the aforementioned matching problem.

³⁰ In most cases, the strategy of the CISP would be to distribute enough income so as to reduce its tax liability to zero.

5.1.20 Accrual versus cash basis

The international research raises potential matching problems arising from differences in the calculation basis of tax revenue and accounting profits – this is most likely to occur where taxable income is calculated on a cash basis, in contrast to the accrual basis utilised for most international accounting standards.

It is my contention that the potential timing differences arising from the above would be limited in the South African context. The Act refers to “received or accrued” for gross income inclusion purposes, and to “actually incurred” in respect of the deduction of expenditure and losses. In both cases, South African tax case law has established a rule of “unconditional” entitlement or obligation – in other words, an accrual basis rather than a “cash received” or “cash paid” basis. This would generally correspond to the accounting treatment of income or expenditure items, resulting in less timing differences than countries with a cash basis applicable to tax legislation.

Notwithstanding the above, there are certain instances where the recognition criteria for accounting purposes would differ from the income inclusions or expenditure deductions required to calculate taxable income. The most common instances are as follows:

- the recognition of provisions for accounting purposes, which in terms of current GAAP may be raised without a fully unconditional liability³¹ - the related

³¹ An example of this would be leave pay or bonus provisions, which may be raised at year-end for accounting purposes but are only payable after the expiration of a certain time period, or subject to the fulfillment of specified conditions.

expenditure would not be deductible for tax purposes to the extent that the settlement thereof is subject to a certain condition;

- prepaid expenditure, such as an upfront payment of an annual insurance premium – section 23H of the Act precludes the deduction of such expenditure to the extent that it does not fulfill certain conditions relating to the timing of the provision of the related goods and services, or where the expenditure exceeds certain prescribed amounts. For accounting purposes, however, the expense may be included in profit and loss when incurred.
- provisions for future expenditure – in some cases, taxpayers may provide for future expenditure in terms of contractual or other obligations (although the recognition of such provisions is subject to strictly applied criteria in terms of GAAP). Section 24C of the Act allows for the deduction of a prescribed portion of such provisions, but only in situations where an amount of income is received up front in terms of a contract, and a liability for future expenditure arises in terms of the same contract (in other words, where the income is partially used to finance the expenditure). Where the provision is granted in terms of GAAP, but does not meet the specific requirements of section 24C, timing differences would arise between revenue collections and tax base measures for AETR purposes.

5.1.21 Provisional tax payments

Schmidt-Faber's comments in respect of estimated corporate tax liabilities are applicable in the South African context. South African corporations and certain individuals required

to register as provisional taxpayers³² make two payments in a tax year, based on estimates of taxable income initially calculated from prior year results. Where necessary, a third “top-up” payment may be required in the subsequent year. This system of provisional tax payments may give rise to mismatches between corporate and individual tax collections and actual results, particularly where results change significantly from year to year.

5.1.22 VAT

Although the VAT Act contains a number of exemptions, as well as providing for certain zero-rated supplies, it would not be feasible to adjust the tax base approximation in equation (4) for most of these items. There is, however, one major exception: as with most international VAT systems, South African VAT is imposed on imported goods, whilst exports are zero-rated. I consider these items (collectively referred to as “net exports”) to be a significant exclusion from MRTs’ original AETR on consumption. I thus deduct net exports from the consumption tax base for AETR purposes, effectively excluding zero-rated exports whilst including taxable imports.

I also note that remuneration in relation to employment is generally exempt from VAT. This treatment is provided for in the methodology utilised for the AETR on consumption via the use of household final consumption expenditure in the denominator of the equation. This measure would exclude remuneration, as households are assumed to provide labour and would thus not pay remuneration as part of consumption expenditure.

³² It is noted that certain individuals may volunteer to register as provisional taxpayers.

5.2 Data sources and comparison thereof to international databases

South African National Accounting data (as well as other relevant time series) are available from the SARB. Although the categories are not directly comparable to the data series utilised by MRT and others, the information available is sufficient to derive the measures necessary for AETR calculations. The calculations necessary to achieve this, as well as the specific adjustments made for the South African case, are set out below.

It is noted that the method of categorisation with respect to the SARB data provides certain advantages relative to the data utilised in the international studies. For example, no decomposition of tax data is required (refer to MM's methodology as set out above), as South African tax revenue data is presented in the necessary categories (personal, corporate, property and so on).

Furthermore, the presentation methods of data relating to household and corporate income facilitate the adaptation of the AETR methodology to accurate synthetic tax bases for the various classes of taxpayer. A detailed discussion of this aspect of the study is included below.

After performing the abovementioned procedures to derive the measures necessary for my domestic AETR calculations, I conclude that these measures are sufficiently similar to the international results to facilitate a meaningful comparison.

I have selected an 11-year period in respect of the South African data and calculations, beginning in 1995 and ending in 2005. This time period was chosen due to the relatively static nature of the South African tax system - VAT had been introduced in 1990, and STC in 1993. This period was also subsequent to the existence of the now-defunct Undistributed Profits Tax (UPT). The only major change to the tax system (aside from annual rate and rebate adjustments) was the introduction of CGT in 2001. The test period thus provides stable and comparative annual measures for the South African calculations.

In addition to the above, certain data was not available for periods prior to the test period selected (with the exception of the components for the AETR on consumption). The calculations would thus have involved extrapolative procedures, or a measure of estimation; this would have weakened the results.

I note that tax revenue data utilised for the purposes of the calculations has been annualised to calendar, rather than fiscal, years. The purpose of this is to ensure matching between the tax revenue and tax base measures utilised for the AETR equations.

5.3 Calculation of South African AETR measures

5.3.1 AETR on consumption

The South African AETR on consumption is calculated using the original MRT methodology (refer equation 4), with an adjustment for net exports in the denominator (refer above). The numerator in the equation consists of annual VAT collections (VAT being the primary indirect tax for the period under consideration), and excise duties. The

tax base in the denominator consists of private (household) and government final consumption expenditure (net of government wages), less exports and including imports (as noted above, exports are zero-rated for VAT purposes whilst imports are subject to VAT at 14 per cent). The ratio can thus be expressed as follows:

$$TSA_C = \frac{VAT + EXC}{PCE + GCE - W_G - E + I} \quad (32)$$

Note that I have included indirect taxes in the denominator, despite the contentions by CT and MM that the tax base should be measured net of these taxes. My reasoning for this inclusion is the method of calculation with respect to the South African VAT fraction (i.e. 14/114), whereby the VAT amount is calculated as a ratio to the VAT-inclusive price. I contend that a calculation of the tax burden on consumption represented by indirect taxes is more meaningful where it is comparable to the actual indirect tax consequences of the transactions involved.

The results of equation (32) for the test period are presented below.

Table 12: AETR on consumption for South Africa, 1995 to 2005

Year	TSA_c
1995	20.00%
1996	19.65%
1997	18.28%
1998	19.55%
1999	20.23%
2000	19.09%
2001	18.56%
2002	17.67%
2003	17.44%
2004	16.73%
2005	17.24%
Average	18.59%

Underlying data sourced from SARB, calculations author's own

The results presented above do not deviate significantly from those that are expected – given the South African VAT rate of 14%, which has remained unchanged during the test period, the range of 16.73 to 20.23 per cent approximates the indirect tax rate with a premium for excise duties. As VAT should be a constant percentage of expenditure, the levels of such should not influence the AETR. The annual fluctuations per the table above may thus be attributable to tariff changes over the test period, an observation noted by Martinez-Mongay (2000).

I compared the South African results to those presented by Carey and Tchilinguirian (2000) and Martinez-Mongay (2000) – the former were calculated using the Mendoza *et al* methodology, without the adjustments discussed by the authors. South Africa's AETR on consumption is relatively low in relation to the sample countries, exceeding only Japan and the United States. The domestic average for the early part of the sample period

was 20 per cent, compared to an OECD average of 16.5% for the period 1991 through 1997.

The low AETR on consumption is indicative of South Africa's focus on equity and poverty relief. As indirect taxes in South Africa are ultimately intended to be borne by the consumer and are generally unavoidable, a high rate of tax on consumption would affect all population demographics, including those with limited resources and high levels of poverty³³.

5.3.2 AETR on households

The AETR measure applicable to South African households was also formulated using the methodology developed by MRT, subject to certain adjustments. The numerator in the equation remains the annual revenue collections in respect of personal taxes on income and capital (PIT). As noted above, MRTs' assumption that both income and capital amounts are taxed at the same rate in the hands of households is valid in the South African context (with the exception of capital gains; refer above). The adjustments put forward by CT in this regard are thus not necessary for the purpose of the calculations.

The data series available from the SARB for the purposes of this AETR equation included a gross amount for the remuneration of all employees (W) – this is reduced by remuneration to government employees (GW) to arrive at the remuneration earned by households (HW).

³³ It is noted, however, that certain essential foodstuffs and household items are zero-rated for VAT purposes. This is due to the potential consumption of such items by low-income population groups.

The operating surplus of unincorporated entities (OSUIE) is included in individual taxable incomes for South African tax purposes – this measure is thus included in the denominator of the AETR on households, and no apportionment is made between household and capital portions for the purposes of the calculations.

As noted above, CT contested the MRT methodology on two main points with respect to households. The first is the potential double taxation of dividends – this is adjusted for in the South African calculations by decreasing the denominator in the AETR on households by the amount of dividends (D) received thereby (as noted above, these amounts are exempt from tax in terms of section 10 of the Act). The second point noted by CT was the potentially exempt nature of receipts from long-term insurers and pension funds. I treat all claims paid by long-term insurers (LTIC) as payable to households, and thus exclude these amounts from the denominator in the AETR equation. Note that the exercise performed by CT to estimate the returns of long-term life insurers is unnecessary in the current circumstance, as the nature of the data presented by the SARB allows for a simple exclusion of insurance claims from the tax base. Finally, the denominator of the equation is reduced by property income earned by the IPFs of long-term insurers (PII_H). These amounts are attributed to household property income, but the tax is assumed to be paid by the insurers (refer above). The amounts are thus included in the tax base utilised for the AETR on capital, and excluded from the household measure.

I note that the data presented by the SARB in respect of households includes results for non-profit institutions serving households (or NPISH). The inclusion of these results is

not intended to significantly affect the South African calculations, as these institutions (by definition) supply goods at insignificant or nil economic prices.

MM formulates a complicated adjustment to the AETR on households in his methodology that effectively includes the net savings of corporations – this assumes that all corporate profits are distributed as dividends. This adjustment is unnecessary in the South African case, due to the exempt nature of dividends. Furthermore, such an adjustment may not be considered realistic, as such payout behaviour is not the norm for South African corporations.

The AETR applicable to South African households may thus be expressed as follows:

$$TSA_H = \frac{PIT}{(OSUIE + HPI + HW - D - PII_H)} \quad (33)$$

The results for equation (33) are presented below.

Table 13: AETR on households for South Africa, 1995 to 2005

Year	TSA_H
1995	15.00%
1996	14.83%
1997	15.41%
1998	15.55%
1999	16.30%
2000	15.62%
2001	14.71%
2002	14.08%
2003	13.55%
2004	13.30%
2005	14.24%
Average	14.78%

Underlying data sourced from SARB, calculations author's own

I reiterate that the results presented in Table 13 are not in themselves categorical indicators of the tax burden on households, but merely a method of apportioning this burden between the labour and capital factors.

Notwithstanding the above, it is worth noting that these results are far below the statutory tax rates imposed on individuals. As noted by the CBO, this type of gap may largely be due to non-compliance, whether intentional or not. Another potential reason for the gap may be the effect of the primary and secondary tax rebates available to individual taxpayers, as well as certain statutory exemptions relating to interest, foreign dividends and certain lumpsum payments.

5.3.3 AETR on labour

As with the measures presented above, the starting point for the methodology used to derive the South African AETR on labour is the methodology proposed by MRT. CTs' adjustments in this regard, as set out above, relate largely to social security contributions – more specifically, categories of social security contributions that are not applicable in the South African context.

CTs' adjustments in respect of pension fund contributions by employees are also not applicable, given my discussion above in this regard. Furthermore, CTs' adjusted methodology proposes that pension fund contributions by employers be added to the denominator of the AETR on labour; this is not valid in the South African case, as such employer contributions are usually made on a “cost to company” basis, and are thus not considered remuneration (nor taxable income) for South African tax purposes.

MM considers a revised methodology relating to non-wage employment costs; once again, such revisions are not necessary in the South African case. Employer expenditure would generally not be included in the tax base of employees unless it relates to fringe benefits; such amounts are difficult to approximate for the purposes of their inclusion in the tax base relating to labour. As noted above, the potential misstatement in the AETR measures due to these amounts has been taken into account when evaluating the results.

The South African AETR on labour is calculated as the taxable portion of salaries and wages (calculated by applying the AETR on households), plus social security costs

(SSC), divided by the aforementioned salaries and wages amount. Despite the adjustments proposed by CT and MM in respect of an imputed wage for self-employed individuals, such adjustments are not made in the South African case. The taxable income of self-employed individuals would not be “remuneration” for employees’ tax purposes, and it is thus considered more appropriate to consider these amounts as a return on capital. Regardless of the classification thereof, the ultimate tax effect for households would be the same.

The equation to calculate the South African AETR on labour is thus expressed as follows:

$$TSA_L = \frac{(TSA_H * HW) + SSC}{HW} \quad (34)$$

The measure of SSC utilised in equation (34) gives rise to two conflicting views. Given the exclusion of employer contributions from remuneration for employees’ tax purposes, SSC should be limited to contributions made by employees. However, the purpose of the AETR equations is to measure the tax burden applicable to labour income – such a burden includes employer contributions, as they are effectively “tax” payments in nature. I thus present two sets of results in respect of equation (34); the first includes both employer and employee social security contributions (TSA_L), while the second includes only those made by employees (TSA_{LEE}). The results are presented below.

Table 14: AETR on labour for South Africa, 1995 to 2005

Year	TSA _L	TSA _{LEE}
1995	45.39%	34.97%
1996	45.23%	34.59%
1997	49.75%	36.59%
1998	49.60%	36.35%
1999	49.53%	36.39%
2000	47.56%	35.48%
2001	44.02%	33.25%
2002	45.21%	33.98%
2003	41.25%	30.60%
2004	41.04%	30.65%
2005	41.04%	31.87%
Average	45.42%	34.07%

Underlying data sourced from SARB, calculations author's own

The results present an obvious disparity between the total tax burden on labour income and the portion of that burden borne by the employees themselves. The average of 34.07 per cent for the second set of results is extremely close to the average statutory tax rate applicable to individuals, which would generally approximate 30 per cent³⁴. The first set of results, which take into account social security contributions made by employers, present AETRs which are approximately one third higher than the second set. This implies a significant “non-remuneration” tax cost for employers. Note, however, that such contributions would generally be deductible for the purposes of calculating the taxable income of the employers.

³⁴ The current range of tax rates is between 18 and 40 per cent. The statutory rate applicable to the IPF of long-term insurers is 30 per cent, and is intended to capture the average rate applicable to individuals given the aforementioned range.

The South African results were compared to the international results presented by Carey and Tchilinguirian (2000) and Martinez-Mongay (2000). The South African AETR is consistently higher than most of the other countries in the sample, with the exception of Sweden and Finland.

5.3.4 AETR on capital

The methodological adjustments proposed by CT and MM in respect of the AETR on capital (which, in MM's case, give rise to a number of new AETR equations) are based on two assumptions made by the authors. The first assumption is that household income should be split into income and capital components, due to differing tax treatments of these two categories. I have previously noted that this assumption is not valid in the South African context, and no further equations need be derived. The second assumption relates to the measure of operating surplus (gross versus net) of the overall economy to be utilised in the denominator of the equation. As noted above, the difference between gross and net operating surplus is the measure of fixed capital consumption, which largely consists of depreciation. I have made the assumption that depreciation approximates the permissible capital allowances for tax purposes (refer above), and thus utilise the net measure of operating surplus (NOS) for the purpose of calculating South African AETRs on capital.

The numerator in the AETR measure applicable to capital is the sum of household taxes on property (calculated by applying the household AETR to the operating surplus of unincorporated entities and household property income), corporate income taxes (CIT),

STC collections and transfer duties (TD). The latter is added in line with CTs' proposal to include all taxes on property – transfer duties are the significant tax in this regard.

The equation utilised to calculate the South African AETR on capital income is thus expressed as follows:

$$TSA_K = \frac{TSA_H * (OSUIE + HPI) + CIT + STC + TD}{NOS} \quad (35)$$

The results of equation 35 are presented below.

Table 15: AETR on capital for South Africa, 1995 to 2005

Year	TSA_K
1995	31.31%
1996	32.51%
1997	32.93%
1998	37.18%
1999	35.74%
2000	31.84%
2001	35.94%
2002	34.70%
2003	34.81%
2004	35.09%
2005	40.34%
Average	34.76%

Underlying data sourced from SARB, calculations author's own

The results presented in Table 15 approximate the statutory tax rates applicable to individual and corporate taxpayers. As noted above, the average statutory tax rate applicable to individuals is 30 per cent, while the corporate tax rate has historically lain

between 37 and 40 per cent (including the effect of STC on corporate distributions). The compliance gap and tax rebates noted above serve to decrease the effective tax rate paid by individuals, whose tax payments comprise a greater portion of total tax receipts than those of corporate taxpayers³⁵. This would serve to decrease the AETR on capital income to the levels observed above.

Another possible explanation for the low AETR relative to statutory tax rates on capital is the effect of tax planning activities undertaken by companies (including shifting tax residency to more tax-benign jurisdictions, or structured finance arrangements with beneficial tax consequences). PricewaterhouseCoopers and the World Bank (2006) report an effective tax rate (i.e. tax expense per corporate income statements as a percentage of accounting profit) of 25% for the sample companies reviewed.

The South African AETR on capital is consistently lower than most of the comparative countries presented in the international studies (ibid), indicating tax arbitrage opportunities for international investment capital. Notwithstanding the introduction of CGT in 2001 (which has not demonstrated any significant increase in the AETR on capital), this trend is in line with the South African government's core fiscal policy goal of increased foreign direct investment.

5.3.5 The South African tax wedge on labour

MM's comments and calculations relating to the effective tax wedge on labour (refer above) are equally applicable in the South African context. Given the AETRs calculated

³⁵ In terms of National Treasury reports for the period under review.

above, which represent the tax burdens applicable to domestic economic factors, it is possible to calculate the tax burden imposed by both consumption and labour taxes (including social security contributions) on the labour income earned by employees. This is an important and informative indicator of the ability of employees to save and invest, and is especially relevant in a country such as South Africa, where savings and investment are key factors in future economic growth.

As discussed above, MM's calculation of the tax wedge on labour reflects the impact of labour and consumption taxes on labour income, and involves the cumulative effect of the following:

- the ratio of employee social security contributions (SSC_{EE}) to gross remuneration (HW);
- the AETR on labour income (TSA_L); and
- the AETR on consumption (TSA_C).

The domestic tax wedge on labour income (TWL_{SA}) can thus be expressed in terms of the following equation:

$$TWL_{SA} = 1 - \left(1 - \frac{SSC_{EE}}{HW}\right)(1 - TSA_L)(1 - TSA_C) \quad (36)$$

The results of equation (36) for the period under review are presented below.

Table 16: Tax wedge on labour for South Africa, 1995 to 2005

Year	TWL_{SA}
1995	65.03%
1996	64.69%
1997	67.63%
1998	67.89%
1999	67.83%
2000	66.00%
2001	62.86%
2002	63.87%
2003	59.77%
2004	59.42%
2005	59.81%
Average	64.07%

Underlying data sourced from SARB, calculations author's own

The results indicate an extremely high tax wedge on labour income relative to statutory South African tax rates, although the results are close to those of the European countries researched for the purposes of MM's study. MM noted that the European results contrasted strongly with those of the main EU trading partners at the time of his study (including the United States, Japan and the United Kingdom, which had effective tax wedges on labour of around 30 per cent), indicating that the South African results are also high relative to those countries.

Overall, the results show a decreasing trend which terminates in the 2005 year. Notwithstanding this trend, the high burden imposed by labour and consumption taxes serves as a deterrent to savings and investment – note that the consumption tax burden, which would consist mainly of VAT, would not include interest expenditure on mortgages or other asset financing (as financial services are VAT-exempt). Household

expenditure on such items would thus decrease after-tax labour returns even further, and diminish the amount available for savings and investment.

5.4 Analysis of South African tax bases and taxpayer burdens

The AETR analysis performed above demonstrates the effective tax burdens on the three broad macroeconomic factors that generate the majority of tax revenues (i.e. consumption, labour income and capital income). The macroeconomic measures of the tax bases utilised in the analysis may be further disintegrated into synthetic tax bases applicable to the two major classes of South African income taxpayers, namely households (i.e. individuals) and corporate entities.

By calculating synthetic tax bases for the two taxpayer groups for each year in the test period, and applying an appropriate weighted average effective tax rate, I measure the potential tax collections for each class of taxpayer and compare them to the actual tax collections for each period. This analysis serves two major purposes: firstly, the absolute measures of potential tax bases provide a quantitative measure of the significant sources of income that are available to generate income tax revenues; secondly, the analysis allows me to conclude on the relative effectiveness of the tax provisions applicable to each class of taxpayer in collecting the aforementioned revenues. This is discussed in more detail below.

5.4.1 Measure of tax collection effectiveness - households

The denominator in equation (33) is effectively the ultimate measure of household taxable income, and thus requires no adjustment for the purposes of this analysis. The household tax base thus comprises the net operating surplus of unincorporated enterprises (taxed in full as part of household income, after permitted allowances and deductions), property income (rentals net of allowable expenditure and interest income) and compensation for employment (salaries and wages). As noted above, dividend income is excluded due to the tax-exempt nature thereof³⁶.

The macroeconomic approximation of the tax base of South African households can therefore be expressed as follows:

$$TBSA_H = OSUIE + HPI + HW - D - PII_H \quad (37)$$

Due to the progressive, bracket-based tax rate system applicable to individual South African taxpayers, as well as the primary annual rebate, the selection of a weighted average effective tax rate requires certain assumptions and complementary calculations. For each taxation year in the period under review, I produce 10 000 random taxable income amounts, allocated equally amongst the statutory tax brackets applicable to the tax year in question. Using the tax brackets, rates and primary rebates applicable to each

³⁶ This definition of income is in line with that proposed by the Canberra Group (2001), which is supported in a report prepared by the United Nations University and the World Institute for Development Economics Research (UNU-WIDER). The aforementioned definition also includes social insurance and assistance transfers received by households; for South African tax purposes, these amounts are generally assumed to be capital in nature and therefore not subject to taxation. I thus exclude these transfers from the tax base approximation.

taxation year, I calculate the corresponding tax liability (after deducting the applicable primary rebate³⁷) for each measure of taxable income. These tax liabilities are then expressed as a ratio of the original taxable income measure, resulting in effective tax rate measures for each data point.

In order to weight the effective tax rates calculated, it is necessary to apply an approximate measure of the probability of each taxable income measure occurring in a random sample of taxpayers. The World Income Inequality Database (WIID), prepared by UNU-WIDER, provides a decile-based decomposition of the South African Gini coefficient for 1997. I rank the aforementioned annual effective tax rate data into deciles, and apply the WIID decile probabilities to each (on the assumption that the weightings of each decile are generally applicable to each year in the period under review). In this manner, I generate weighted average effective tax rates applicable to households for the relevant tax years. These rates are then annualised, in order to make them comparable to the annualised tax base measures. The annualised measures are denoted $WAETR_H$.

By applying the weighted average effective tax rates to the macroeconomic tax base measures, I calculate the potential tax revenues that may be collected from households. These amounts are then compared to actual personal income tax collections – the ratio of actual to potential tax collections provides a quantitative measure of the effectiveness of the South African tax system in extracting tax revenues from households.

³⁷ The secondary tax rebate, applicable to taxpayers older than 65 years of age, is ignored for the purposes of these calculations.

Table 17: Effectiveness of personal income tax collections, 1995 - 2005

Year	TBSA _H	WAETR _H	Potential personal tax revenue	Actual personal tax revenue	Effectiveness of collection
1995	272,315	41.36%	112,622	51,623	46%
1996	319,225	47.74%	152,385	59,496	39%
1997	351,897	48.71%	171,403	68,048	40%
1998	386,743	49.34%	190,833	75,422	40%
1999	411,619	49.04%	201,851	84,335	42%
2000	442,457	48.56%	214,851	87,848	41%
2001	475,139	48.69%	231,340	89,700	39%
2002	525,865	47.09%	247,626	95,972	39%
2003	577,922	46.53%	268,885	99,762	37%
2004	621,426	46.57%	289,406	108,647	38%
2005	669,726	46.96%	314,487	124,285	40%

Amounts in R millions. Underlying data sourced from the SARB and SARS. Calculations author's own.

Table 17 presents the results of the calculations discussed above. The high measures of WAETR_H generally represent the top tax bracket applicable to individual taxpayers in each fiscal year; this is unsurprising, as South Africa's historically high measures of income inequality are likely to result in the majority of taxable income being attributed to wealthy taxpayers.

The results indicate that the South African tax system collects approximately 40% of potential individual tax revenues per annum. These results are supported by those presented above, which provides an aggregated measure of the tax burden on households. The results reflect poorly on the effectiveness of revenue collection in this area – personal tax revenues are clearly not being optimised. Given the considerable extent to which personal income taxes contribute to overall tax revenues (refer Appendix B), measures taken by Government to improve collections from the personal tax base would have a

proportionately large effect on overall tax revenues. This would allow for decreased tax burdens in other areas. This is discussed in more detail in section 7.

When considered in conjunction with the measures of the South African AETR on labour, the low effective tax collections appear to arise from the taxation of property income (as the AETR on labour is far closer to the statutory rate). This phenomenon may largely be attributed to non-compliance, whether intentional or not. Tax on labour income is far more difficult to avoid, given the PAYE system and the onus of payment being placed on employers.

5.4.2 Measure of tax collection effectiveness – corporate entities

As noted above, corporations are subject to two income taxes: corporate income tax payable on profits, and STC payable on net dividends paid. These two taxes are considered separately for the purposes of this analysis.

The AETR on capital, calculated in terms of equation (35) utilised the net operating surplus of the overall economy as the tax base applicable to capital income. This measure is generally accepted as a macroeconomic proxy for pre-tax income, and is thus considered a suitable synthetic measure of corporate taxable income (having regard to the assumptions made above). For the purposes of this analysis, I therefore define the corporate tax base $TBSA_{CO}$ as the aggregate net operating surplus of financial and non-financial corporations. The net operating surplus is decreased by dividends received, due

to their exempt nature. This is considered to be the most significant permanent difference between accounting net income and the tax base for corporations.

South African corporations are subject to a flat annual tax rate – there is therefore no need to perform a weighting exercise, as was the case with individuals. I therefore utilise the statutory corporate tax rates published by SARS for each taxation year in the period under review, and annualise them for the purposes of comparison with the annual tax base measures³⁸. These rates are denoted as $WAETR_{CO}$.

Table 18: Effectiveness of corporate income tax collections, 1995 - 2005

Year	$TBSA_{CO}$	$WAETR_{CO}$	Potential corporate tax revenue	Actual corporate tax revenue	Effectiveness of collection
1995	68,956	35.07%	24,182	14,115	58%
1996	81,636	35.00%	28,573	21,408	75%
1997	91,968	35.00%	32,189	24,134	75%
1998	86,735	35.00%	30,357	29,935	99%
1999	94,907	31.18%	29,593	30,220	102%
2000	126,559	30.07%	38,056	33,248	87%
2001	155,773	30.00%	46,732	58,701	126%
2002	197,353	30.00%	59,206	68,807	116%
2003	199,374	30.00%	59,812	70,356	118%
2004	239,717	30.00%	71,915	75,493	105%
2005	254,305	29.24%	74,349	98,931	133%

Amounts in R millions. Underlying data sourced from SARB and SARS. Calculations author's own.

Table 18 presents the results of the calculations and analysis discussed above. In direct contrast to the results of the analysis of individual taxpayers, these results indicate a high

³⁸ A "transitional levy", calculated at 5% of taxable income in excess of R50 000 (before set off of assessed tax losses brought forward), was applicable to the 1994/1995 taxation year only. This levy has been ignored for the purposes of this analysis. Alternative tax rate regimes applicable to small business enterprises, mining companies, personal services companies and labour brokers have also been ignored.

degree of effectiveness in corporate tax collections, particularly in the post-2000 periods. In a number of cases, the actual tax collections exceed the potential tax collections; this phenomenon is likely due to timing differences between the accounting measures of the tax base and the actual amounts calculated in terms of taxing legislation, or may result from the South African government reporting tax collections from foreign corporations or from income attributions in respect of CFCs, the results of which are not included in the net operating surplus figure comprising the synthesised tax base. Regardless of these anomalies, the nuances of the South African tax system applicable to companies appear distinctly more effective than those applicable to individuals.

STC is levied on the annual difference between dividends paid and received by South African corporations. For the purposes of the STC calculations, certain amounts may be deemed by section 64C of the Act to be “dividends” for tax purposes, but may not be presented as such for National Accounting purposes. Furthermore, certain types of dividend are exempt from STC, in terms of the provisions of section 64B of the Act³⁹. These subtleties of the South African tax legislation reduce the effectiveness of National Accounts measures of corporate dividends received and paid for the purposes of STC tax base synthesis.

Notwithstanding the above, the lack of information in respect of deemed and exempt dividend amounts necessitates the use of National Accounts data for the purposes of this

³⁹ The most common of these is the “group” exemption that may be elected in terms of section 64B(5)(f), whereby a subsidiary company may elect that the liability for STC on a dividend paid to its parent be deferred to such parent. In such a case, the STC would be payable when the amount is distributed by the parent receiving the dividend. This would give rise to timing differences between the original dividend payment and the final incidence of the STC liability.

analysis. The annual STC tax base $TBSA_{STC}$ is thus defined as corporate dividends payments less corporate dividend receipts for each year in the period under review.

As with corporate income tax, STC is levied in accordance with a flat tax rate regime.

Once again, I utilise the rates published by SARS for each applicable tax year, annualised for comparison with the abovementioned tax base measures, generating annual results for the series $WAETR_{STC}$.

Table 19: Effectiveness of STC collections, 1995 – 2005

Year	$TBSA_{STC}$	$WAETR_{STC}$	Potential STC revenue	Actual STC revenue	Effectiveness of collection
1995	16,592	24.48%	4,062	1,304	32%
1996	19,166	12.13%	2,324	1,262	54%
1997	29,580	12.01%	3,552	1,338	38%
1998	31,354	12.50%	3,919	1,446	37%
1999	43,685	12.50%	5,461	1,942	36%
2000	60,336	12.50%	7,542	3,150	42%
2001	84,092	12.50%	10,512	4,031	38%
2002	89,935	12.50%	11,242	7,163	64%
2003	90,306	12.50%	11,288	6,326	56%
2004	106,963	12.50%	13,370	6,133	46%
2005	131,834	12.50%	16,479	7,487	45%

Amounts in R millions. Underlying data sourced from SARB and SARS. Calculations author's own.

Table 19 presents the results of the analysis performed in respect of STC. The measures of effectiveness are markedly lower than those observed for corporate tax, particularly in the earlier years of the review period. As noted above, some of the deviation may be explained via the STC exemptions not considered in the macroeconomic measure of the

tax base. Non-compliance or avoidance is extremely difficult, given the requirement for corporate entities to file Annual Financial Statements with tax returns; it is noted, however, that STC payment periods and documentation differ from the normal corporate income tax system.

5.5 Measure of tax collection effectiveness – VAT

The incidence of VAT is expected to vest with households. I therefore utilise the private consumption expenditure of households as the tax base ($TBSA_{VAT}$) for the purposes of calculating the effectiveness of VAT collections. The VAT rate has remained consistent at 14 per cent for the test period; no adjustment is thus required in this regard. The 14 per cent rate is applied to the household expenditure measures discussed above, yielding the results presented below:

Table 20: Effectiveness of VAT collections, 1995 – 2005

Year	$TBSA_{VAT}$	$WAETR_{VAT}$	Potential VAT revenue	Actual VAT revenue	Effectiveness of collection
1995	343,037	14.00%	48,025	29,270	61%
1996	385,921	14.00%	54,029	32,768	61%
1997	434,307	14.00%	60,803	35,903	59%
1998	470,165	14.00%	65,823	40,096	61%
1999	514,271	14.00%	71,998	43,677	61%
2000	580,802	14.00%	81,312	48,377	59%
2001	639,800	14.00%	89,572	54,455	61%
2002	722,091	14.00%	101,093	61,057	60%
2003	785,632	14.00%	109,988	70,150	64%
2004	870,411	14.00%	121,858	80,682	66%
2005	967,940	14.00%	135,512	98,158	72%

Amounts in R millions. Underlying data sourced from SARB and SARS. Calculations author's own.

The results in Table 20 indicate an average effectiveness of 60 per cent with respect to VAT collections. Although this may appear low, it is noted that the tax base is likely to include expenditures that are exempt from or are zero-rated for VAT purposes; the most likely examples are fuel, rental expenses in respect of residential accommodation, and financial services (particularly interest). When these factors are taken into account, the collection ratio of VAT may be considered satisfactory.

6 Alternative tax system components for South Africa

This section attempts to canvass alternative methods of taxing South African income and capital gains, via changes in tax legislation or the structure of the tax system. The alternatives are based on the results arising from the testing performed, as reported in the preceding sections.

For the purposes of this discussion, I distinguish between income, capital gains and consumption expenditures.

6.1 Income

The types of income which can be earned by South African taxpayers are limited to investment, or property, income (dividends, interest, rent and royalties), remuneration⁴⁰, business profits⁴¹, and gratuitous transfers⁴². Each of these categories is considered separately below.

6.1.1 Investment income

The results of the AETR testing in the South African context indicate a clear disparity between effective tax burdens relating to individual taxpayer income from remuneration alone, and total income (including investment income). As noted above, this most likely results from incorrect reporting and non-compliance. When individuals earn

⁴⁰ For the purposes of this section, remuneration is assigned the definition found in the Fourth Schedule to the Act – briefly, a payment from an employer to an employee, whether or not for services rendered.

⁴¹ For the purposes of this section, business profits are defined as earnings from the sale of goods or services in the course of a profit-making enterprise.

⁴² This category would generally comprise transfers from government (such as subsidy payments), donations and inheritances.

remuneration, employers are required to withhold taxes at the time of payment, and to remit these taxes to the revenue authorities. The Fourth Schedule to the ITA (and to a lesser extent, the Seventh Schedule thereto) contain a number of punitive provisions targeted at enforcing compliance by employers – effectively, the legal liability to withhold and remit this taxation rests with the employer.

In contrast to the above, investment income is generally reported by individuals in their annual tax returns. Paying entities have no responsibility to withhold taxes, or to ensure compliance by the recipient taxpayer. It is suspected that this method of reporting, essentially a form of self-assessment, leads to non-reporting and omission of investment amounts in the tax returns of individuals. This theory is supported by the low effective tax rate of individuals when investment income amounts are included in the AETR tax base.

In light of the above, it may be more effective to move to a withholding tax system with regards to the investment income of individual South African taxpayers. As is the case with the current dividend/STC system, tax will be payable on the amount of income distributed as investment income, regardless of its nature (i.e. dividend, interest, rental or royalties). Tax provisions could be amended to shift the legal liability for these taxes to the paying entity, where such entity is a corporation.

This recommendation is founded on the assumption that a significant portion of investment income payments are made by corporate entities (in the case of dividend

income, all payments), particularly financial institutions. Should this assumption be valid, the responsibility for remitting income taxes on investment income would be transferred to a sector that is far more regulated than households, allowing for better controls by Government (as most corporate entities would be required to prepare Annual Financial Statements). Furthermore, the systems and administrative functions required to adhere to this system of taxation would arguably be far simpler to establish in a corporate environment than would be the case for individuals.

The assumption noted above would likely hold true for dividends, interest and royalty payments. Rental payments, however, would present more difficulties, as many payments between lessees and lessors are made between individuals (for example, the rental of residential accommodation). However, non-compliance in this area is likely not significant, as individuals would be incentivised to report income from rental enterprises in order to deduct associated expenditure for income tax purposes (such as mortgage payments). For the purposes of the suggested changes, rental enterprises would require categorisation under business enterprises (refer below).

It was noted above that income from foreign sources is difficult to track, and thus leads to difficulties in enforcing compliance for tax purposes. This difficulty would be equally applicable in the context of the suggested withholding tax system, but could be mitigated via the use of the existing exchange control system (in other words, tax could be withheld and remitted at the point of entry into the country). Furthermore, it is suggested that a large percentage of the foreign income of individual taxpayers is earned via unit trusts, or

similar investment vehicles, which would be undertaken through a corporate financial intermediary. Tax could thus be withheld, and adequate records kept, by the intermediary.

It would be a misnomer to state that the above would broaden the investment income tax base, as such amounts are already included in the existing tax base by virtue of the definition of “gross income” in the Act. However, these measures would likely increase Government’s access to the existing tax base, with a resultant increase in tax revenues.

By placing the incidence of the tax on investment income with individuals (although the responsibility for collection would rest with corporates), no tax exemptions would be required. This would remove the propensity to shift between income types for the purposes of tax arbitrage, and would increase the overall neutrality of the domestic tax system.

Given the expected increase in revenue receipts from improved access to the tax base, the tax rate on investment income could be reduced. This would increase the after-tax return on investments, which would have a number of positive results, including the encouragement of investment, and increased savings and capital formation. A flat rate would provide the most simplicity for the entities required to withhold the tax – although not progressive, the proportionate nature of such a rate would ensure that an acceptable level of equity is maintained (as taxpayers earning high levels of investment income would pay more tax than those earning lower levels of such income). Furthermore, Auerbach’s comments *supra* regarding progressive taxes and labour supply (refer above),

which may have limited application in the South African context, would have far more relevance with respect to investment income (in other words, individuals may choose not to invest if marginal tax rates on investment income reach unacceptable levels). A proportionate tax rate would thus limit the extent to which levels of taxation would affect investment decisions. Should a flat rate be applied to all categories of investment income, taxpayers would be unbiased in their choice of investment income. This aspect is quantified and discussed in more detail below.

With dividend income currently exempt from taxation in the hands of recipients, a number of tax-planning strategies have been developed that utilise dividend payments as a central method of tax-avoidance. By withholding taxes at source, and applying the exemption to all forms of investment income, individuals would be less inclined to enter into tax-avoidance schemes of this nature.

It is submitted that the above does not find application with respect to corporate investment income. The results presented above indicate a high rate of effectiveness with respect to the collection of corporate tax payments, indicating that the existing corporate tax system is operating as designed with minimal non-compliance. It is noted that the proposed withholding tax system for individuals would not affect the treatment of these amounts for corporate tax purposes, as the tax payments remitted to the Government should be deductible in the hands of the paying corporations⁴³. Furthermore, a number of

⁴³ With the exception of withholding taxes on dividend payments

international commentaries state that it is undesirable for corporate taxable income to differ significantly from net profit for accounting purposes⁴⁴.

The use of a flat withholding tax rate on investment income, rather than the historical inclusion thereof in taxable income, is quantified in the table below. Investment income is calculated as the total of interest, dividends, rentals and royalties received by households, including property income from long-term insurers (i.e. IPF income). Various withholding tax rates are applied to the investment income totals, and the projected tax revenues are compared to the actual tax revenues from households for the relevant sample period⁴⁵. Actual revenue figures included in the table include STC collections for the given period.

Table 21: Projected tax revenues from household investment income, 1995 – 2005

Year	Total investment income	Projected Revenue - 10% withholding tax rate	Projected Revenue - 15% withholding tax rate	Projected Revenue - 17.5% withholding tax rate	Proportionate share of actual revenue	Deviation - 10%	Deviation - 15%	Deviation - 17.5%
1995	84,469	8,447	12,670	14,782	12,071	-3,624	599	2,711
1996	96,100	9,610	14,415	16,818	13,448	-2,461	2,344	4,747
1997	118,227	11,823	17,734	20,690	16,605	-248	5,663	8,619
1998	126,076	12,608	18,911	22,063	18,067	537	6,841	9,992
1999	132,722	13,272	19,908	23,226	20,078	1,201	7,837	11,155
2000	142,453	14,245	21,368	24,929	21,599	2,174	9,297	12,858
2001	154,415	15,442	23,162	27,023	22,846	3,371	11,091	14,952
2002	184,207	18,421	27,631	32,236	28,454	6,350	15,560	20,165
2003	182,738	18,274	27,411	31,979	26,882	6,203	15,340	19,908
2004	195,234	19,523	29,285	34,166	28,137	7,453	17,214	22,095
2005	222,170	22,217	33,326	38,880	33,730	10,146	21,255	26,809

Amounts in R millions. Underlying data sourced from the SARB and SARS. Calculations author's own.

⁴⁴ Refer for example Desai (2004).

⁴⁵ Calculated based on the proportion of investment income to the total household tax bases for that year.

The results presented above indicate that actual tax revenues from the investment income of households could have been matched and exceeded with a withholding tax rate of 17.5%, assuming that all investment income is paid from corporate entities per the suggested methodology. The aforementioned rate is well below the statutory tax rates applicable to households for the periods under review, and is lower than the current minimum tax rate for households.

6.1.2 Remuneration

The AETR and tax base utilisation testing set out above indicates that the current PAYE system has been an effective revenue collection method for the sample period. It is therefore not considered necessary to significantly amend the current taxing regime in respect of employment income. Notwithstanding this, the withholding tax system is expected to increase potential tax revenues, thereby providing the scope for future decreases in personal tax rates on employment income. This decrease would lower the tax wedge on labour earnings (see above) and increase after-tax wealth, resulting in increased savings, investment and domestic capital formation. Increased personal tax burdens have been noted above as a hindrance to economic growth and international competitiveness. This should, however, be considered in conjunction with a possible decrease in the corporate tax rate (see below).

The legislators should also consider the possibility of introducing tax incentives for foreign workers, in order to attract these individuals to the South African labour market.

Given the historical and existing income inequalities in South Africa, it is unlikely that a change to a proportionate basis of taxation for employment income would be favourably considered by the South African Government.

6.1.3 Business profits

The abovementioned AETR and tax base utilisation testing performed above similarly indicates a high level of effectiveness in respect of the corporate tax regime. Given the existing regulatory and reporting requirements associated with South African corporations, tax avoidance is difficult – this is supported by the high percentage of effectiveness with which tax revenues are collected from the existing tax base. However, a decrease in the corporate tax rate would lead to increased foreign investment, a crucial component of economic growth. Given the increased personal tax collections that could potentially result from the measures discussed above, it may be prudent to lower the corporate tax rate in the near future.

Furthermore, it is suggested that unincorporated enterprises be afforded the same tax status (including the same tax rate) as those of an incorporated nature. In the current tax regime, earnings from these enterprises are included in the individual's taxable income, potentially resulting in a higher rate of tax than if such enterprises were incorporated. Note only is the current regime inequitable, but the move to a corporate tax rate could potentially encourage entrepreneurship and enterprise development.

Finally, the taxation of foreign branches requires consideration. As noted above, branches are taxed at 34 per cent, a full five percentage points higher than South African

corporations. This adverse tax treatment is intended to compensate for the lack of STC on amounts remitted by branches to foreign head offices, but is currently a further disincentive for foreign expansion into South Africa, leading to less than optimal levels of foreign capital inflows and decreased opportunities for productive employment within the country. Given the effectiveness of corporate tax collections, it is submitted that the tax rate applicable to branches could be decreased without a significant loss in corporate tax revenues.

6.2 Capital gains

As noted above, Marcus (2006) reports that international research into best tax practices indicates that the taxation of capital gains has negative effects on capital formation, labour productivity, foreign and domestic direct investment, business creation, entrepreneurship and taxpayer equity. Furthermore, the introduction of CGT to a tax system has no proven growth effects with respect to government revenue, nor is there support to suggest that it reduces the prevalence of tax avoidance schemes⁴⁶. Marcus concludes, based on the above, that the introduction of the South African CGT runs contrary to all the fiscal policy goals used as support for its insertion into the tax code.

In light of the negative economic effects of CGT, as well as its potentially damaging effect on equity, it is recommended that the South African tax legislation be reverted back to the regime whereby capital gains are untaxed. Note that profits on the sale of speculative assets would be classified as income, and should be taxed in accordance with

⁴⁶ To reiterate, where capital gains are untaxed or taxed at preferential rates relative to income, taxpayers will often engage in tax avoidance schemes whereby income streams are converted to capital gains or receipts.

the proposed withholding tax system discussed above. There is sufficient international literature to suggest that the positive long-term economic effects of leaving capital gains untaxed far outweigh the benefits of CGT to revenue authorities.

Notwithstanding the above, it is highly unlikely that the South African Government will support the outright abolition of the CGT. It is therefore necessary to consider less extreme amendments to the current CGT legislation that may alleviate the negative effects noted in the international research. Some examples of the recommended amendments are discussed below.

The first measure to be introduced should be the inflation indexation of the asset base costs utilised to calculate taxable capital gains. This measure would increase the equity of the CGT regime by reducing taxable gains for changes in price levels, thereby keeping taxable capital gains in line with real asset returns.

The Government should also consider the introduction of exemptions, rebates or preferential rates available to foreign investors. In order to attract FDI, the South African CGT regime could introduce relief provisions targeted at foreign multinationals and/or direct investments by foreigners in South African companies. By increasing the ease of disinvestment, and lowering the cost thereof, the return on South African investments could appear more attractive to foreign sources of capital.

The relief provisions described above should extend to venture capital investors in key industries or areas. Similar to the rationale regarding FDI, these measures will encourage the provision of capital to areas that require it, such as entrepreneurial enterprises.

Finally, provisions should be introduced to protect lower-income taxpayers from the “bunching problem” noted above. These provisions may include direct exemptions for assets utilised for retirement funding purposes, a minimum threshold below which capital gains are tax-free, or the extension of the “primary residence” capital gains abatement to other assets. The Canadian concept of a “lifetime capital gains exemption” may also be considered⁴⁷.

6.2.1 Move to consumption tax

As noted elsewhere in this report, proposals on international tax reform have shown an overwhelming trend towards the adoption of a consumption-based tax system. The United States Congressional Budget Office (CBO) collates the international research on the alternative components of a consumption-based taxation system, as well as the macroeconomic effects thereof (CBO, 1997).

CBO notes that the move to a consumption-based tax would have a positive effect on domestic savings, although the magnitude of the effect is difficult to quantify. Boskin (1978) reports a significant increase in savings in the presence of increases in after-tax

⁴⁷ Canadian individuals are entitled to a \$500,000 capital gains exemption over their lifetimes in respect of dispositions of certain prescribed assets. Once the aforementioned amount has been exhausted, all future capital gains are taxable at the appropriate effective rate.

rates of return on investments – the latter generally follows from a decrease in the income tax burden on investment income.

By reducing the taxes on savings, and thus on future consumption (as future incomes are increased), a consumption tax encourages a decrease in current period consumption in favour of future periods. CBO states that overall lifetime resources will remain the same where the tax reform in favour of consumption is revenue-neutral. Notwithstanding this, revenue neutrality is possible in South Africa by broadening the existing VAT base, thereby leading to an overall increase in total lifetime resources and overall net wealth. This is discussed in more detail below.

CBO (ibid) also states that consumption taxes have a redistribution effect between older and younger taxpayers. Because older taxpayers typically hold a larger portion of business assets (a situation that applies in the South African context), a consumption tax on these assets tends to move the overall tax burden to the older generation. Younger generations therefore have increased current-period wealth and can therefore increase savings. This would, however, be partially offset by the effects of a withholding tax on investment income (see above), which would generally apply to all taxpayer demographics, but redistribution would still take place.

Increases in after-tax returns on investments also have a positive effect on foreign capital inflows, due to the incentive for foreign investors to inject capital into domestic investment vehicles. CBO (1997) notes that the relative ease with which capital moves

across international borders ensures that foreign investors will take advantage of lower relative domestic tax rates in the same manner that domestic investors do. The cumulative effect of the increases in foreign and domestic investment lead to an increased capital formation, a core South African goal and a necessary ingredient for sustained economic growth.

Increased investment will also result from the positive effects a consumption tax has on costs of capital. CBO (ibid) notes that the full deductibility of capital inputs under a VAT regime significantly lowers the cost of capital related to firm investments – this is exacerbated by the lower rate of double taxation on corporate profits⁴⁸. Furthermore, the deductibility of investment costs (in most cases equivalent to the present value of future income from the investment) at the time of purchase effectively renders the investment tax-neutral in the long run. This provides greater incentive for investment by corporate entities⁴⁹.

Consumption-based tax reform has a number of potential effects on wages and unemployment. CBO (1997) reports that unemployment may increase in the short-term, an unacceptable result in the current South African labour market. CBO (ibid) also quotes studies by Auerbach and Fullerton and Lim that indicate increases in the real wage rate following changes in the timing of household consumption, which may have negative effects on the demand for the labour. In contrast, an increase in the availability of capital

⁴⁸ A lack of taxation at the corporate level limits the taxation on dividends to the withholding tax proposed in this report. In terms of the current South African income tax legislation, corporate profits are subject to tax at both the corporate level and upon distribution, in the form of STC and its proposed replacement.

⁴⁹ Note that this would not hold in the case of individuals.

would have a positive effect on productive labour in the long run – essentially the opposite effect of the introduction of CGT.

The most logical base for a fully consumption-based tax system in South Africa is the existing VAT system. The AETR testing performed above indicates that the VAT system is currently an effective source of revenue, with the results indicating minimal avoidance and a high level of compliance. It is my contention that by increasing the VAT rate, and taking legislative steps to broaden the applicable tax base, the VAT system could all but replace the existing South African personal and corporate income taxes, as well as the STC.

The above contention is supported via preliminary modeling of the proposed VAT base, and adjusting the rate until historic revenue collection levels from the abovementioned taxes are met. In order to provide adequate revenue levels, the definition of VATable supplies would need to be changed to incorporate presently exempt items, particularly financial services. CBO (1997) notes that the inclusion of financial services in the VAT base is generally undesirable, as this may lead to a “cascading” effect⁵⁰, and the South African VAT system currently exempts these services. Notwithstanding this, it is contended that financial services between corporations should be included in the base, as the model obviates the need for corporate tax on the revenues earned from a higher VAT. This contention, along with the rationale behind maintaining the exemption on the investment income of individuals, is discussed further below.

⁵⁰ Briefly, this refers to the phenomenon whereby an item is taxed at more than one stage of the production process. This is typically undesirable in a VAT system, which seeks to vest the cumulative incidence of the tax in the final consumer.

In order to calculate the extended VAT base, I utilise the gross value added of incorporated and unincorporated enterprises – this measure is the best macroeconomic proxy for the net profits of South African corporations, grossed up for remuneration and depreciation of capital assets (input VAT may currently not be claimed on employee costs and depreciation). I then add dividends paid by corporations, as these amounts represent appropriations of profit, and should thus not be deductible for VAT purposes. I then deduct the investment income of households, on the assumption that these amounts will be subjected to the 17.5 per cent withholding tax discussed above.

Table 26 below presents the projected VAT revenues for the sample period underlying this report, calculated by applying a 24 per cent VAT rate to the abovementioned tax base:

Table 22: Projected VAT revenues at a 24% rate and extended tax base, 1995 – 2005

Year	Tax base	Projected revenues	Actual revenues
1995	485,841	90,839	87,694
1996	554,172	103,691	99,591
1997	636,811	116,775	114,232
1998	685,351	126,031	129,836
1999	756,611	141,106	144,282
2000	869,859	165,318	155,232
2001	988,748	190,203	170,425
2002	1,145,772	218,802	193,801
2003	1,202,758	232,927	220,232
2004	1,305,379	253,745	240,058
2005	1,456,788	281,867	279,922

Amounts in R millions. Underlying data sourced from the SARB and SARS. Calculations author's own.

The projected tax revenues in table 26 include the 17.5 per cent withholding tax on the investment income of individuals, as discussed above. The rationale for maintaining this separate tax in the proposed extended VAT regime is based on the economic consequences of taxing investment returns at the high VAT rate. The results indicate that the higher VAT rate and broader tax base would have matched revenues from income taxes (personal and corporate), STC⁵¹ and VAT in nine of the eleven years in the sample. Notwithstanding the maintenance of tax revenue levels, this tax regime would have the following benefits for the South African economy:

- the elimination of personal income taxes on returns from labour (i.e. remuneration), increasing personal disposal income and the potential for household savings, investment and capital formation;
- increased labour supplies due to higher returns from employment, and
- a statutory corporate tax rate of zero per cent, providing an enormous incentive for FDI and foreign capital investment in South African firms, as well as the relocation of foreign businesses to South Africa with the associated economic advantages (increased demand for labour, increased productive capacity and more rapid economic growth).

The advantages of the withholding tax system on the investment system as discussed above, both from an economic and compliance point of view, are also available.

⁵¹ Under the proposed regime, withholding taxes are payable on household investment income only; inter-corporate dividend payments would thus be exempt from taxation, including payments to foreign shareholders. The latter would lead to advantages with respect to foreign investment arising from the increased returns to foreign investors.

It is further noted that the projections in Table 26 are based on a tax base that utilised the net operating surplus of unincorporated enterprises, rather than the gross value added thereof, due to the lack of data availability; a more detailed analysis of the proposed composition of the tax base is thus likely to result in a higher base and may lead to a decrease in the break-even VAT rate.

The proposed implementation of a consumption-based tax system would require considerable amendments to existing tax legislation and associated regulations; for example, all enterprises would require VAT registration, regardless of turnover⁵². There is also a potential increase in the administration burdens of both taxpayers and tax authorities. Notwithstanding this, the increased administrative and regulatory burdens would be counterbalanced or exceeded by the decreased burdens resulting from the abolition of existing personal and corporate taxes. Furthermore, the VAT systems are already in place at both the taxpayer and revenue authority levels, allowing both parties to leverage off existing resources.

Due to the nature of VAT as an indirect tax, the effect of an increased rate on prices would require consideration. Although the all-in price of most goods would increase, it is submitted that the higher disposable incomes available to South African taxpayers would counteract most negative effects on demand. The current exemptions for certain goods,

⁵² This amendment would likely precipitate the need for an amended definition of “enterprise” for the purposes of the VAT Act.

such as specified foodstuffs and fuels, should be maintained due to the equity considerations of their consumption by lower-income demographics.

As noted above, the South African Government has resisted a move to a consumption-based system of taxation due to political considerations. A primary reason for this is the regressive nature of VAT, supported by research from Go *et al* (2005). The aforementioned researchers, however, note that the overall progressiveness of the tax system should be considered and not one tax in isolation. Should the exemptions noted above be maintained, the potential economic advantages thereof, coupled with the neutral or positive effect on revenue collections makes such a proposal a viable alternative to the current domestic tax regime.

7 Conclusion

7.1 Qualitative analysis

The qualitative framework is underpinned by the internationally recognised goals and characteristics of tax systems. The aforementioned are understood to be “best practice” components of such systems, and are critical to the effective and efficient collection of tax revenues and achievement of fiscal policy goals.

Based on my analysis of South Africa’s historical and existing fiscal goals, it is reasonable to conclude that the South African Government’s fiscal planning (in other words, the planned uses of the tax system) is in line with the internationally recognised goals of tax systems. The existence of internationally recognised “best practice” characteristics with respect to tax systems would thus increase the overall effectiveness and efficiency of the domestic tax system, and would lead to the achievement of the fiscal policy goals.

With respect to wealth and income distribution, as well as social development, an investigation of domestic economic analysis indicates consistently poor statistics in South Africa relative to other countries. The progressiveness of the tax system is a key factor in reversing the current situation, and is generally recognised as a key fiscal method of achieving redistribution. The introduction of CGT to the South African tax legislation in 2001 was another intended method of achieving increased equity – part of the Government’s justification for taxing capital gains (historically exempt from taxation)

was the view that CGT is a “wealth tax”, finding incidence with higher-income taxpayer groups and providing increased revenues to redistribute to poorer areas. Notwithstanding this view, international research indicates that CGT may have counterproductive effects on equity, particularly where taxable capital gains are included in taxable income and subject to the same tax rates and brackets as normal income (as is the case in South Africa). Furthermore, CGT often has an impact on older and lower-income demographics, due to its effect on investment used to fund retirement and the inability of the aforementioned groups to hold diversified investment portfolios. Despite the effect of provisions targeted against these phenomena, it has been concluded that the introduction of CGT may do more harm than good in terms of overall taxpayer equity.

Economic growth in South Africa is expected to improve with increases in the competitiveness of exports, the development of intangible capital to increase the competitiveness and efficiency of production, increased levels of domestic savings and investment, and the encouragement of FDI. Analysts also noted a need for the expansion of the skilled labour force. It is therefore clear that the achievement of economic growth is dependent on the accomplishment of a number of other fiscal policy goals, and is not a standalone goal – the same is true for South Africa’s competitiveness in international markets.

International sources stated that the abovementioned growth in intangible capital may be aided via the inclusion of targeted tax provisions in a country’s legislation, including credits, deductions or allowances related to research and development and the provision

of tax allowances in respect of the amortisation of intangible assets. Unlike countries such as Canada, which have both of the aforementioned provisions, South Africa's existing income legislation has historically been deficient in this area; the tax system did not promote growth in intangible capital. However, Budget announcements in early 2007 have proposed the introduction of a number of tax incentives designed to promote research and development, including cost deductions for tax purposes and accelerated tax amortisation allowances for R&D-related assets. This is viewed as a step in the right direction in respect of aiding indirect capital formation.

Domestic economic analysis indicates decreasing trends in respect of both the gross and net savings of South African residents, particularly in respect of households and government. In the case of households, these trends are generally attributed to increases in direct and indirect tax burdens, increased inflation, related decreases in real deposit rates, high levels of household debt and the poor performance of the Rand; dissavings by government are ascribed to a tax base that was insufficient to finance the required levels of public expenditure (although this latter trend has shown strong indications of reversal). Domestic capital formation has also demonstrated levels far below the international standard; this is ascribed to socio-political factors such as crime and political instability, as well as a worsening labour situation and the abovementioned decrease in savings. Once again, international commentary indicates the introduction of CGT would probably serve to aggravate these negative trends, as potential capital attrition and decreased rates of return would discourage savings and capital formation in favour of current-period consumption and investment in more tax-benign jurisdictions abroad. The latter occurs

despite the taxation of worldwide income due to the difficulty involved in tracking such investments, and may lead to increased non-compliance (this is, however, somewhat mitigated by the exchange control regime in South Africa).

Another negative effect of CGT, particularly when coupled with the current tax exemption on dividend income, is a tendency to skew investor demand away from high-growth capital investments into investments with high dividend payouts. This is a tremendous disadvantage to start-up and entrepreneurial enterprises, the development of which is a key factor in sustained economic growth and increased productive capacity.

As noted above, negative trends have also been noted in respect of the South African labour market. It is recognised that these trends are due to socio-economic factors such as poverty and a lack of high-quality education, factors which are not directly affected by provision of the tax legislation. Notwithstanding this, the abovementioned difficulties with respect to capital formation and high tax burdens on skilled labour (a factor which leads to the emigration of such labour) have served to exacerbate the problem. Furthermore, a lack of tax incentives to skilled foreign labour does not assist in attracting the needed skills from overseas. The oft-quoted economic theory that progressive tax systems and increased marginal effective tax rates lead to decreased labour supply is also raised by international researchers, although the application of this theory in the South African context is questionable.

Low relative levels of FDI are also noted in the domestic economic analysis, and taxation is mentioned as a core improvement area to increase these levels. High statutory and effective tax rates, in conjunction with the abovementioned capital attrition caused by CGT, are generally recognised as areas which would discourage FDI in South Africa. Inequitable STC provisions, such as the inability of foreign parents to deduct dividends paid by South African subsidiaries, are another discouraging factor.

Having regard to the above, I conclude that the current income tax legislation does not serve as a positive factor in the achievement of South African fiscal policy goals, given the existing situation in each of the core areas.

I measure the structure of the South African tax system using an internationally-developed benchmarking framework. The aforementioned framework is considered to be a comprehensive and transferable set of standards that may be applied to tax systems across international borders, and an improvement over previous efforts in this regard. The performance of the South African tax system relative to the international benchmarks allows me to conclude as to the level at which the system exhibits the necessary characteristics for satisfactory levels of effectiveness and efficiency.

The first benchmark tests the levels of concentration of, and robustness in the domestic base; the aforementioned factors are necessary to achieve the required levels of tax revenues. By examining National Treasury reports for the five fiscal years preceding the date of this report, I find that income tax (personal and corporate) and VAT comprise greater than 75 per cent of total revenues in all cases. Based on an international standard

of six taxes in respect of this benchmark, I conclude that the tax base appears too concentrated to sustain required revenue levels in the case of economic downturn. This conclusion is contrasted with those drawn from the statistical analysis of tax revenues (refer below).

The second benchmark tests the equity and neutrality of the tax system, as well as enforcing the findings regarding revenue collection (as set out above), and involves the examination of the number of exemptions available in respect of income taxes. I list the exemptions available in this regard, and find them targeted at specific demographics and transactions. I thus conclude that the exemptions (with the exception of that applicable to dividend income and the partial taxability of capital gains) are unlikely to lead to undue tax planning, and generally have an acceptably positive effect on equity.

The third benchmark examines the overall number of tax rates inherent in the tax system, and is designed to test the certainty and simplicity thereof. Despite the high number of tax rates in South Africa, I conclude that the rates are specific with respect to the class of taxpayer rather than the type of transaction, and thus should not negatively affect the levels of certainty and simplicity inherent in the tax system.

The fourth benchmark examines the applicable VAT rate, and the number of goods and services that are zero-rated or VAT-exempt. While similar in part to the second benchmark, this standard identifies the extent to which VAT as an indirect tax aids economic growth and revenue collection. The South African VAT has a single rate (aside

from the zero rate), and is thus in line with international standards. Furthermore, the zero-rated and exempt supplies prescribed by the VAT Act maintain a broad tax base while still promoting equity, and are also in line with international standards (for example, the beneficial or neutral VAT treatment of items such as exports and financial services).

Finally, an examination of the administrative cost of tax collections incurred by the SARS and comparison thereof to international results allows me to evaluate the economy of tax revenue collection. I calculate the costs of administration and collection per R100 of tax revenue collected, and obtain results that are in line with or better than international standards. I therefore conclude that the South African tax system displays a satisfactory level of economy with respect to the collection of revenues, a positive indicator as to the efficiency thereof.

The conclusions set out above indicate that the South African tax system generally exhibits the internationally recognised characteristics required to achieve acceptable levels of economy and effectiveness, despite a highly concentrated tax base. However, the specific tax provisions may not be sufficient to stimulate the economy in the areas required to achieve fiscal policy goals – emphasis is placed on the negative effects of CGT, and high tax burdens on household and corporate income.

7.2 Quantitative analysis

The AETRs calculated in respect of South African consumption taxes (include excise duties) indicate an effective tax burden that does not deviate significantly from the rates imposed by statute. The results also indicated a low tax burden relative to international

measures. These results generally express satisfactory levels of effectiveness in respect of indirect taxes.

The AETR calculations for households included remuneration, household property (or capital) income and the results of unincorporated business enterprises. In light of the prescribed tax exemption in respect of dividend income, dividends received were excluded from the tax base. The results indicate effective tax burdens that are significantly lower than those imposed by statute, which may be an indicator of non-compliance. Notwithstanding this, the purpose of the AETR on households is the formulation of a measure with which to apportion the tax burden of households between labour and capital income.

The household AETR on labour income includes social security contributions (SSC) made by employers and a measure of remuneration calculated by applying the abovementioned effective tax rate to total remuneration. Two measures were presented – one included the aforementioned contributions, and one excluding them. The latter demonstrated an AETR on labour income that was very close to the average statutory rates for the sample period, indicating a high level of effectiveness for the sample period. The SSC-inclusive measure was significantly higher, indicating a high tax burden for employers in respect of non-remuneration tax costs.

The AETR on capital income included an apportioned measure of household property income and profits of unincorporated enterprises, as well as corporate income taxes, STC

and property transfer duties. These tax revenues were related to the net operating surplus of the overall economy, a measure generally considered to approximate the results of all enterprises. The results for the sample period indicate effective tax rates that are very close to the combined statutory personal and corporate income tax rates, which leads to the conclusion that the tax system is generally effective in taxing capital income and gains. Notwithstanding this, the taxation of such income among the different classes of taxpayers requires further consideration (refer below).

Finally, measures of the South African tax wedge on labour income revealed significantly higher tax burdens relative to statutory rates. The results are, however, in line with those of European countries forming part of the international research efforts in this area. While the effective tax burdens represented by the tax wedge measure indicates the effective taxation of household income, the levels thereof are expected to further deter domestic savings and investment via decreases in disposable income.

I measure the synthetic tax base for households by aggregating household property income (less exempt dividend receipts), remuneration and the results of unincorporated enterprises. Using a weighted average rate for each year in the sample period (calculated by via the calculation of samples of tax liabilities, ranked and weighted according to South African income demographics), I calculate measures of effectiveness for personal income tax that are between 37 and 46 per cent. I thereby conclude that the tax system generally does not effectively exploit the personal income tax base, the major source of tax revenues for all years in the sample period.

I apply weighted average statutory corporate tax rates to the aggregate net operating surplus of South African corporations. The results of these calculations indicate a much higher level of effectiveness in respect of corporate tax collections, exceeding 100 per cent in a number of sample years (this is possible due to tax collections related to the results of foreign operations not included in the net operating surplus measure, among other factors). I therefore conclude that the corporate tax regime effectively exploits the tax base. A similar exercise is performed in respect of STC, utilising net corporate dividend payments as the tax base. The results of the STC calculations range from 32 to 64 per cent effectiveness, generally lower than the results for corporate income taxes. However, these levels may be ascribed to statutory exemptions and exclusions that are not taken into account in the tax base measure, and are not sufficient to conclude that STC is not an effective revenue collection tool.

Finally, the VAT rate of 14 per cent (which has remained consistent throughout the sample period) is applied to measures of household consumption expenditure for the sample years under review (on the assumption that VAT vests with the consumer which, in most cases, would comprise households). The results indicate that the VAT system is 59 to 72 per cent effective over the sample years. When coupled with the expectation that the tax base measure includes zero-rated or exempt goods and services, these results support the conclusion that VAT is an effective revenue collection tool.

The AETR analysis indicates that the tax system is effective in respect of the enforcement of statutory tax burdens on consumption, remuneration and capital income. However, the measures of effectiveness in revenue collection indicate a deficiency in respect of the taxation of household investment income, in contrast to the higher levels of effectiveness in respect of indirect taxes and corporations.

7.3 Policy implications

The quantitative analysis indicates a high level of effectiveness in respect of corporate income taxes and STC, a result that is unsurprising given the level of regulatory and reporting requirements applicable to corporate taxpayers. Households, however, show mixed results; taxes on remuneration are collected with higher levels of effectiveness than taxes on capital income. This is most likely due to the PAYE system applicable to employment taxes, which ensures high levels of compliance through a withholding tax at the employer level, as opposed to other forms of income which are reported via tax return at the discretion of the taxpayer. It is therefore recommended that the South African tax legislators consider a withholding tax system in respect of all investment income paid to South African individuals. On the assumption that most investment income is paid via corporate entities such as banks and other financial institutions, the administration of such a system could be undertaken by the aforementioned entities.

This recommendation is in line with recently announced legislative changes that will replace STC (for which the paying corporation is liable) with a withholding tax levied on the recipient shareholder. I perform preliminary calculations, and conclude that a withholding tax rate of between 15 and 17.5 per cent would have matched historic tax

revenues on investment income. The aforementioned rates are significantly lower than the applicable statutory rates, which would encourage savings and investment via increased after-tax rates of return.

Notwithstanding the rate range noted above, a higher withholding tax on the broader investment income tax base could justify a decrease in the personal tax rates applicable to remuneration. This would lessen the effects of the tax wedge on labour income, and supplement the encouragement of savings and investments via increased household disposable income. The introduction of tax incentives for foreign workers is also a consideration, as this would attract much-needed skilled labour to South Africa (although the training of local workers is a preferable long-term measure).

Following from the above, the broader tax base could also justify a decrease in corporate tax rates. This measure would encourage foreign capital inflows, and would have a positive effect on FDI. Furthermore, I propose that unincorporated enterprises be afforded the same tax status as corporations – the lower effective tax rate would encourage entrepreneurship and capital formation. The tax rate on foreign branches, which is currently higher than the tax rate on resident corporations should also be decreased. This would increase repatriated profits, and would further encourage foreign investment.

As noted above, the introduction of CGT was noted as a measure that is likely to be counterproductive in respect of other fiscal policy goals. It is therefore recommended that

the CGT regime be removed from the income tax legislation. However, it is highly unlikely that the South African Government would support this recommendation; it is thus necessary to consider alternative tax provisions to mitigate the negative effects of CGT. I therefore recommend certain amendments and introductions to the existing CGT legislation including, but not limited to, the following:

- inflation indexation of asset base costs to reduce taxable gains resulting from price changes;
- the introduction of rebates, exemptions or preferential rates applicable to the capital gains of foreign investors, to maintain rates of return and encourage foreign investment;
- the extension of the abovementioned relief measures to domestic investors in key economic or industrial areas, and
- protective provisions for certain taxpayer demographics, particularly in respect of retirement-funding assets – such provisions may include a “lifetime capital gain exemption” or minimum thresholds for taxable capital gains.

Finally, international research has revealed a growing trend towards the adoption of consumption-based, rather than income-based taxes as part of tax reform. This method of taxation was advocated by domestic economic commentary. Despite resistance by the South African Government to this manner of taxation (largely for political reasons), I contend that a consumption-based system of taxation should be considered as part of future tax reforms. International research has shown that consumption taxes encourage savings and capital formation, result in increased redistribution and equity, increase after-

tax returns on investment and decrease costs of capital (leading to increased investment from domestic and foreign sources). I present a preliminary quantification of the effects of an increased VAT rate and broader indirect tax base in conjunction with withholding taxes on household investment income, and conclude that VAT could replace employment and corporate taxes, as well as STC, with overall revenue neutrality. The increased indirect tax rate and concomitant effect on prices is far outweighed by the economic and income benefits of employment and corporate taxes.

7.4 Summation and areas for further research

The conclusions set out above indicate that the South African tax system is generally well-designed in terms of international standards, and is capable of producing adequate, sustainable levels of revenue. With the exception of taxes on household investment income, the domestic tax system is effective and efficient in terms of revenue collections and the exploitation of existing tax bases.

Notwithstanding the above, the existing tax legislation is not currently sufficient to meet most fiscal policy goals, particularly given the existing economic situation in South Africa. Despite recent amendments to the tax legislation in this regard, it is submitted that significant amendments to the legislation or drastic reforms are required to achieve these goals.

Potential further research could be performed on the nature and level of tax distortion present in the South African context – this information would be valuable for the purposes of refining the domestic AETR measures. Furthermore, the wider structure of

the tax system may be examined using the Gallagher benchmarks not utilised for this study. Finally, the proposed changes to the dividend tax regime should improve the effectiveness of tax collection in the area of household taxes. Once data is available, such improvements could be measures via the AETR methodology employed above.

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Sources of quantitative data:

- South African Reserve Bank Online statistical queries: www.reservebank.co.za

- Statistics South Africa:

www.statssa.gov.za

Appendix A – Key macroeconomic variables for South Africa (annual averages)

		1992-1996	1996-2002	2003-2017		
				Conservative	Base	Optimistic
Components of real gross domestic product						
Consumption expenditure by households	yy%	4.2	2.6	1.6	2.7	3.8
Consumption expenditure by government	yy%	-0.6	1.8	1.9	2.8	3.8
Gross fixed capital formation	yy%	7.3	0.6	2.0	3.6	5.1
Change in inventories	R billion	5.1	3.3	0.7	7.1	15.2
Gross domestic expenditure	yy%	4.0	2.0	1.7	2.9	4.2
Exports of goods and services	yy%	10.2	4.1	1.0	2.6	4.4
Imports of goods and services	yy%	13.2	0.7	1.6	3.4	5.3
Gross domestic product	yy%	2.8	2.4	1.5	2.7	4.0
Domestic prices						
FPI inflation	%	7.9	8.0	5.8	5.4	4.9
CPI headline inflation	%	8.7	6.1	5.9	5.6	4.9
CPIX inflation	%	9.0	7.4	6.0	5.6	4.9
Interest rates and monetary variables						
Prime rate	%	17.6	17.3	14.8	13.5	12.2
Real prime rate	%	5.1	9.4	8.4	7.6	7.0
Long bond rate	%	15.2	13.6	10.9	9.9	8.7
Real long bond rate	%	5.0	6.2	4.7	4.1	3.7
M3 money supply	yy%	13.3	11.9	7.9	8.6	9.0
Private sector credit extension	yy%	15.5	11.0	7.7	8.6	9.2
Balance of payments and exchange rate						
Balance on current account	% of GDP	0.0	-0.7	-0.7	-1.3	-1.4
Total capital flows	% of GDP	0.1	2.4	1.0	1.5	2.1
Real effective exchange rate	yy%	-1.7	-6.8	-1.4	-1.1	-0.8
\$/R exchange rate	R per US\$	3.52	7.05	14.28	13.64	12.71
Government finance						
Total current revenue	% of GDP	24.1	16.9	19.5	26.8	20.4
General government deficit	% of GDP	7.9	3.7	2.9	2.2	1.2
Debt	% of GDP	44.1	45.5	40.7	35.9	30.7
Interest on debt	% of GDP	5.6	5.8	4.4	3.5	2.6
Domestic saving						
Gross domestic saving	% of GDP	16.4	15.2	16.2	16.6	17.4
Saving by households	% of GDP	2.1	0.4	0.1	0.2	0.3
Corporate saving	% of GDP	6.7	3.6	3.3	3.5	3.9
Saving by general government	% of GDP	-5.3	-1.9	-1.2	-0.5	0.5
Household sector						
Real disposable income	yy%	3.3	3.0	0.9	2.4	3.7
Real disposable income per capita	yy%	1.1	1.2	0.5	2.3	3.6
Real disposable income per capita	Rand	9 110	9 600	10 637	11 806	12 834
Ratio of debt to disposable income	%	55.2	56.9	53.2	52.0	51.5
Labour market and productivity						
Total employment	yy%	0.3	-1.5	0.5	1.6	2.3
Unemployment rate	%	30.3	35.0	31.0	27.7	24.2
Real wage per worker	yy%	1.2	2.5	1.0	1.0	1.0
Output per worker	yy%	2.5	4.1	1.0	1.1	1.1
Total factor productivity	yy%	1.4	2.4	0.7	0.9	1.1

Source: ABSA (2003)

Appendix B – Composition of South African tax revenues and tax ratios by fiscal year (2000/2001 – 2004/2005)

	2000/2001		2001/2002		2002/2003		2003/2004		2004/2005	
Taxes on income and profits	125,418	57%	150,028	59%	167,900	59%	175,900	58%	199,700	56%
Persons and individuals	85,293	39%	90,390	36%	94,300	33%	99,200	33%	111,000	31%
Companies	29,169	13%	42,354	17%	55,700	20%	61,700	20%	70,800	20%
Secondary Tax on Companies	4,028	2%	7,163	3%	6,300	2%	6,100	2%	7,500	2%
Other	6,928	3%	10,121	4%	11,500	4%	8,800	3%	10,400	3%
Taxes on property	3,979	2%	4,629	2%	5,100	2%	6,700	2%	9,000	3%
Domestic taxes on goods and services	79,020	36%	86,853	34%	97,600	35%	110,200	36%	131,900	37%
Value-added tax/sales tax	54,402	25%	61,057	24%	70,100	25%	80,700	27%	98,200	28%
Specific excise duties	9,127	4%	9,797	4%	10,400	4%	11,400	4%	13,100	4%
Levies on fuel	14,495	7%	14,923	6%	15,300	5%	16,700	6%	19,200	5%
Other	996	0%	1,076	0%	1,600	1%	1,500	0%	1,400	0%
Taxes on international trade and transactions	8,227	4%	8,680	3%	9,600	3%	8,400	3%	13,300	4%
Stamp duties and fees	1,562	1%	1,767	1%	1,600	1%	1,400	0%	1,200	0%
Miscellaneous	2,290	1%	305	0%	400	0%	-	-	-	-
Total tax revenue	220,496	100%	252,262	100%	282,200	100%	302,600	100%	355,100	100%
Gross domestic product	1,020,007		1,168,699		1,260,693		1,398,157		1,539,253	
Tax/GDP ratio (annualised)	21.62%		21.13%		21.99%		21.40%		22.50%	

Source: SARS and Statistics South Africa. Calculations author's own. All amounts in R millions.